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AIR OPERATIONS IN NORTHERN LAOS (U)

1 NOV 70 - 1 APR 71

3 MAY 1971

HQ PACAF

Directorate of Operations Analysis
CHECO/CORONA HARVEST DIVISION

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The counterinsurgency and unconventional warfare environment of Southeast Asia has resulted in the employment of USAF airpower to meet a multitude of requirements. The varied applications of airpower have involved the full spectrum of USAF aerospace vehicles, support equipment, and manpower. As a result, there has been an accumulation of operational data and experiences that, as a priority, must be collected, documented, and analyzed as to current and future impact upon USAF policies, concepts, and doctrine.

Fortunately, the value of collecting and documenting our SEA experiences was recognized at an early date. In 1962, Hq USAF directed CINCPACAF to establish an activity that would be primarily responsive to Air Staff requirements and direction, and would provide timely and analytical studies of USAF combat operations in SEA.

Project CHECO, an acronym for Contemporary Historical Examination of Current Operations, was established to meet this Air Staff requirement. Managed by Hq PACAF, with elements at Hq 7AF and 7AF/13AF, Project CHECO provides a scholarly, "on-going" historical examination, documentation, and reporting on USAF policies, concepts, and doctrine in PACOM. This CHECO report is part of the overall documentation and examination which is being accomplished. Along with the other CHECO publications, this is an authentic source for an assessment of the effectiveness of USAF airpower in PACOM.


ROLAND A. CAMPBELL, Major General, USAF
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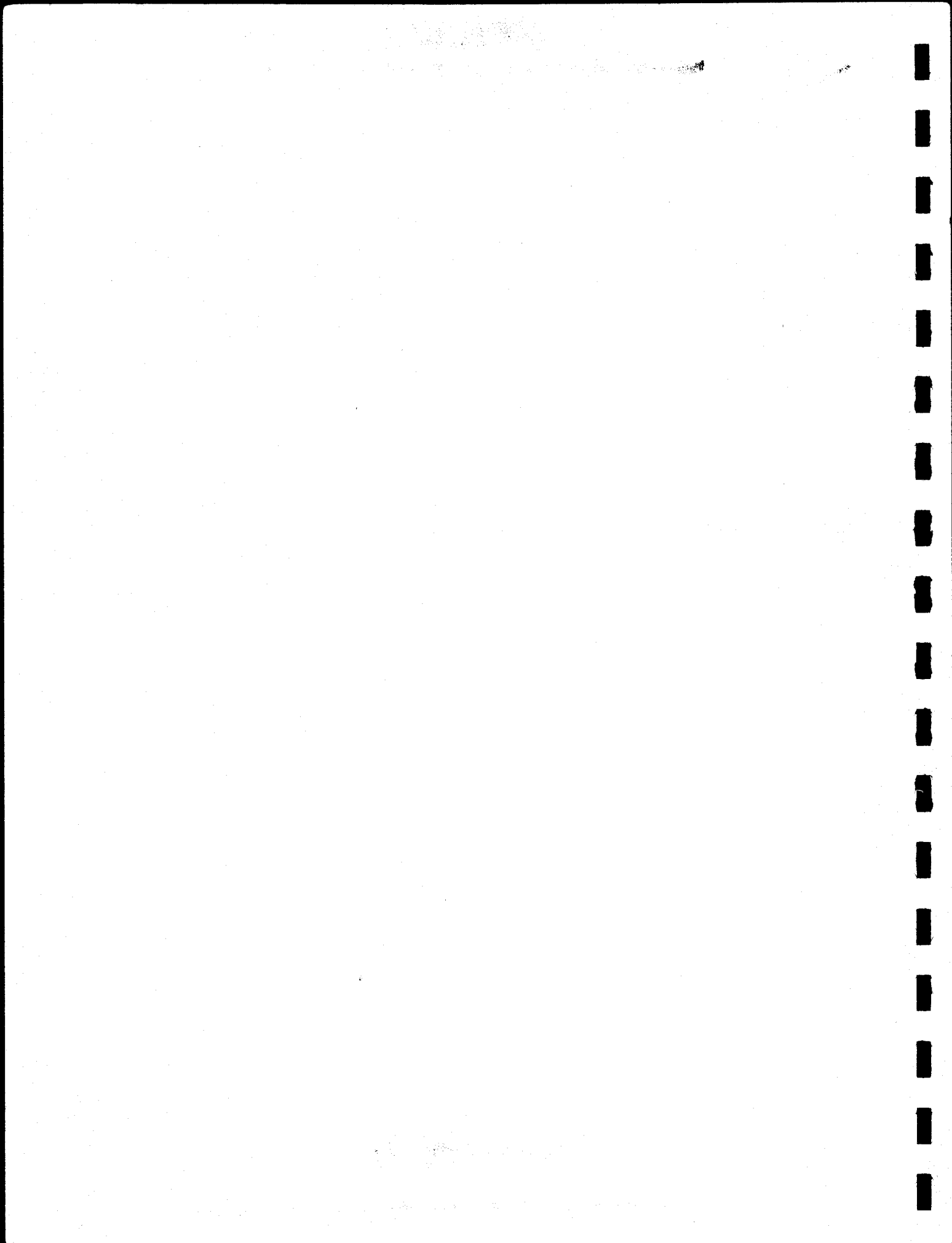
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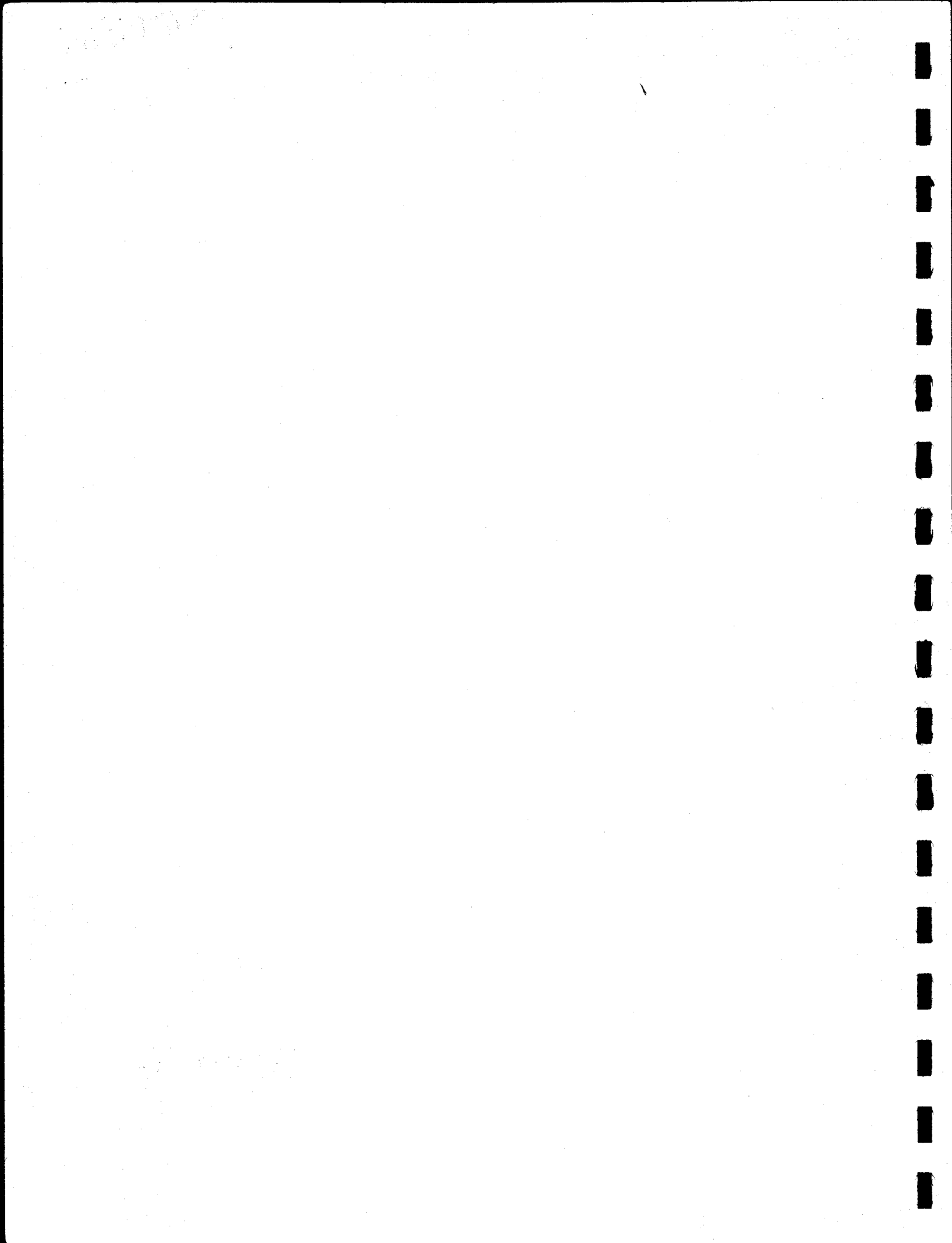
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CHAPTER I

OVERVIEW

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The historically cyclic nature of the air and ground war in northern Laos, specifically Military Region (MR) I and II, essentially repeated itself in 1970 and early 1971, with some major differences in the scenario. During the normal course of summer wet season events, with roads washed out and under pressure by Major General Vang Pao's guerrillas, the communist Pathet Lao and North Vietnamese Army (NVA/PL) regulars retreated or withdrew to their traditional strongholds east of the Plain of Jars (PDJ). With the advent of the October-November dry season, the enemy regrouped, repaired the roads, and began their annual dry season surge, culminating with a series of sharp attacks against such key friendly points as Vang Pao's headquarters area and the important Lima Site airfields used for forward tactical air support and resupply.

Enemy successes in the dry season surges varied, but by mid-March 1970 the NVA/PL had penetrated to Skyline Ridge, adjacent to Major General Vang Pao's headquarters at Long Tieng. The enemy was subsequently repulsed by tactical air support and airlifted reinforcements, which held Long Tieng until the transition into the wet season, when the threat subsided.

Significant differences in the 1970-71 picture created an altered tactical situation. The enemy had withdrawn to the east during the wet season, but was poised on the west edge of the Plain of Jars. With the exception of fairly strong forces at Lima Site 32, Vang Pao had only

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tenuous control of the Lima Site "crescent" stretching across the north edge of the Plain of Jars. To ease the pressure on the easily interdicted Route 7, the NVA/PL had completed a bypass, designated Route 723. This Route, later renamed Route 72, came directly west out of North Vietnam to its terminus at or near Xieng Khouangville and Route 4, relieving the supply pinch the enemy suffered using Route 7 as his primary LOC to the PDJ. (See Figure 1.) Route 73 was also completed during the period of this report, and offered a bypass for Route 7 around the major interdiction points between Ban Ban and the Plain of Jars. Visual sightings of vehicle movement during the period of the report indicated that most of the supplies entering the Plain of Jars travelled down Route 73 from the major storage facilities in the Ban Ban Valley.^{1/}

With COUNTERPUNCH III in the Ban Ban area achieving limited success, the enemy appeared to have a time and tactical advantage he had not previously enjoyed at the outset of the dry season. November and December were typically repair and resupply months for the NVA/PL, but as early as 1 November 1970, the enemy took over a strategic mountaintop northeast of Ban Na (Lima Site 15) overlooking the Plain of Jars, and Ban Na itself took incoming fire that night. Through mid-November the enemy signaled his intentions by engaging in several "push-pull" clashes with Vang Pao's forces for control of mountaintops north of LS-15, northernmost of the important Lima Sites comprising the Vang Pao stronghold.^{2/}

Sporadic contact and attacks by fire (ABF) continued through December, but in January 1971 the enemy indicated his intention to mount an offensive in MR I and MR II. In Military Region I, pressure began to build against Luang Prabang. In the Route 19, Nam (River) Bac, Nam Ou, Mekong LOC, through which the enemy supplied much of MR I, an estimated 20 boats were

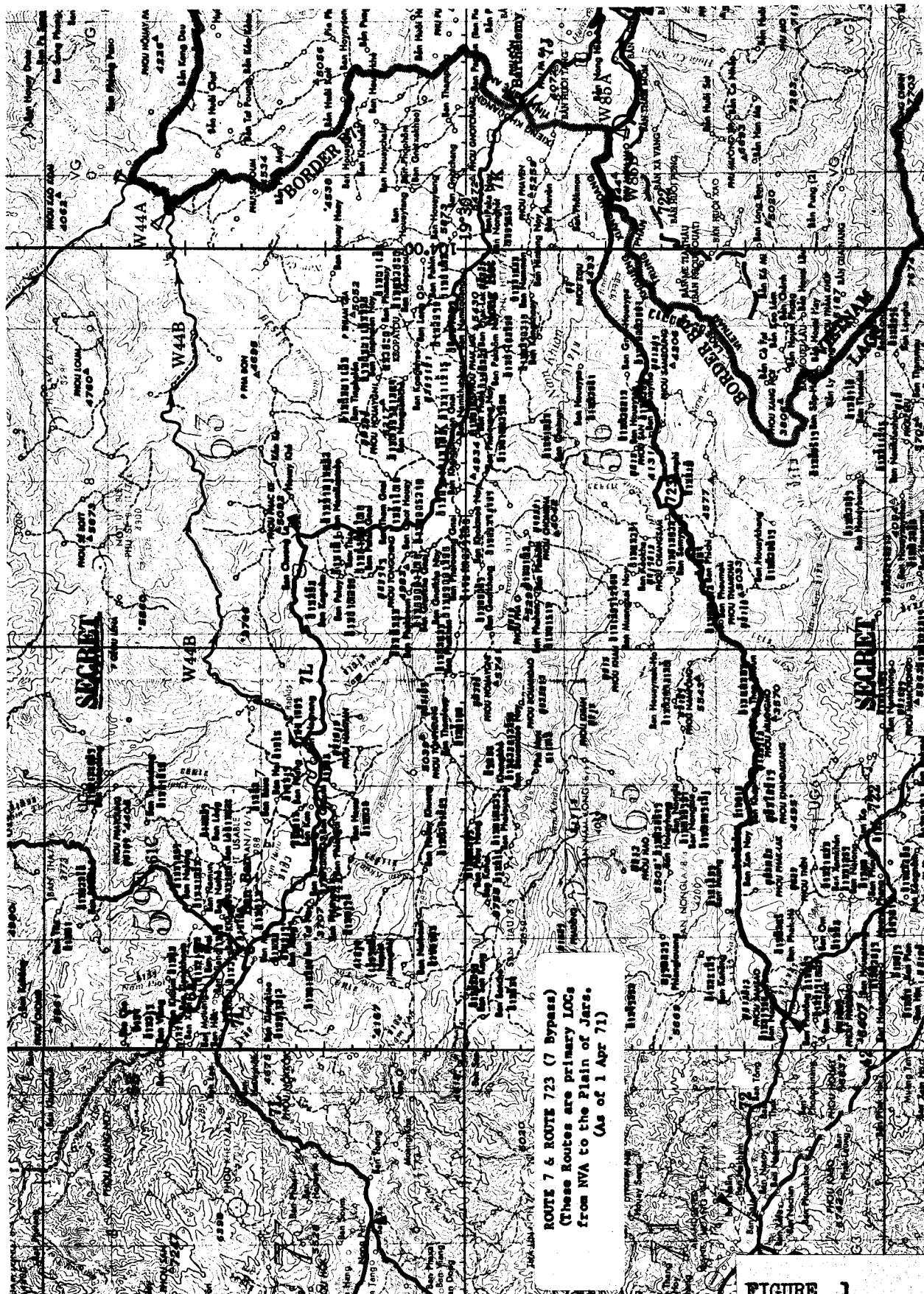


FIGURE 1

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discovered and taken under attack by Raven FACs and T-28s. This was
but part of the infiltration and supply effort in the region, which cul-
minated in an estimated total of approximately 13,000 enemy troops in MR I
by mid-March. Of these, six battalions - 2,500 to 3,000 troops - were
deployed in an arc north and east of Luang Prabang, seriously threatening
the airfield (L-54) and possibly the city itself. 4/

Many thought that the Luang Prabang pressure was more political
than military, and their feelings were summed up by an Embassy official
during a Barrel Roll (BR) Working Group meeting: 5/

*Luang Prabang is being pressed, but the King is
staying put. He has sent his son to Vientiane
to the royal residence there to insure that the
Royal line continues. The King's stay in Luang
Prabang is a challenge to those attacking; if
the King is killed the NVA/PL are responsible.*

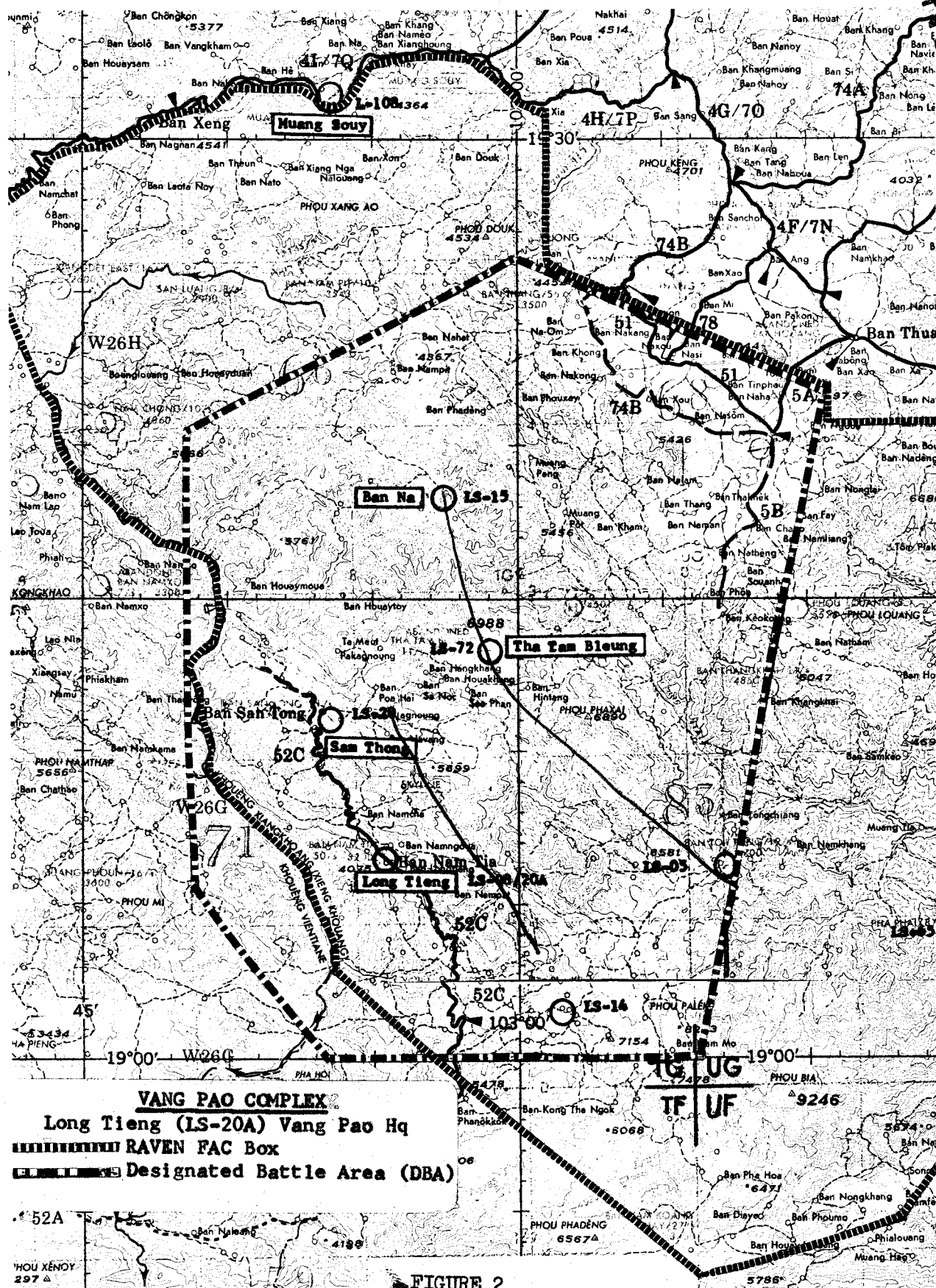
This move pointed out one of the anomalies of the Laotian portion of the
entire Southeast Asia conflict: the Pathet Lao, although the Communist
dominated military arm in Laos, still remained staunchly Buddhist in
religion and resolutely devoted to their King. Both of these concepts
were in direct contradistinction to hard-core Communist philosophy. The
question remained in doubt as to whether the Pathet Lao would actively
support the NVA in any serious attempt to overrun the city.

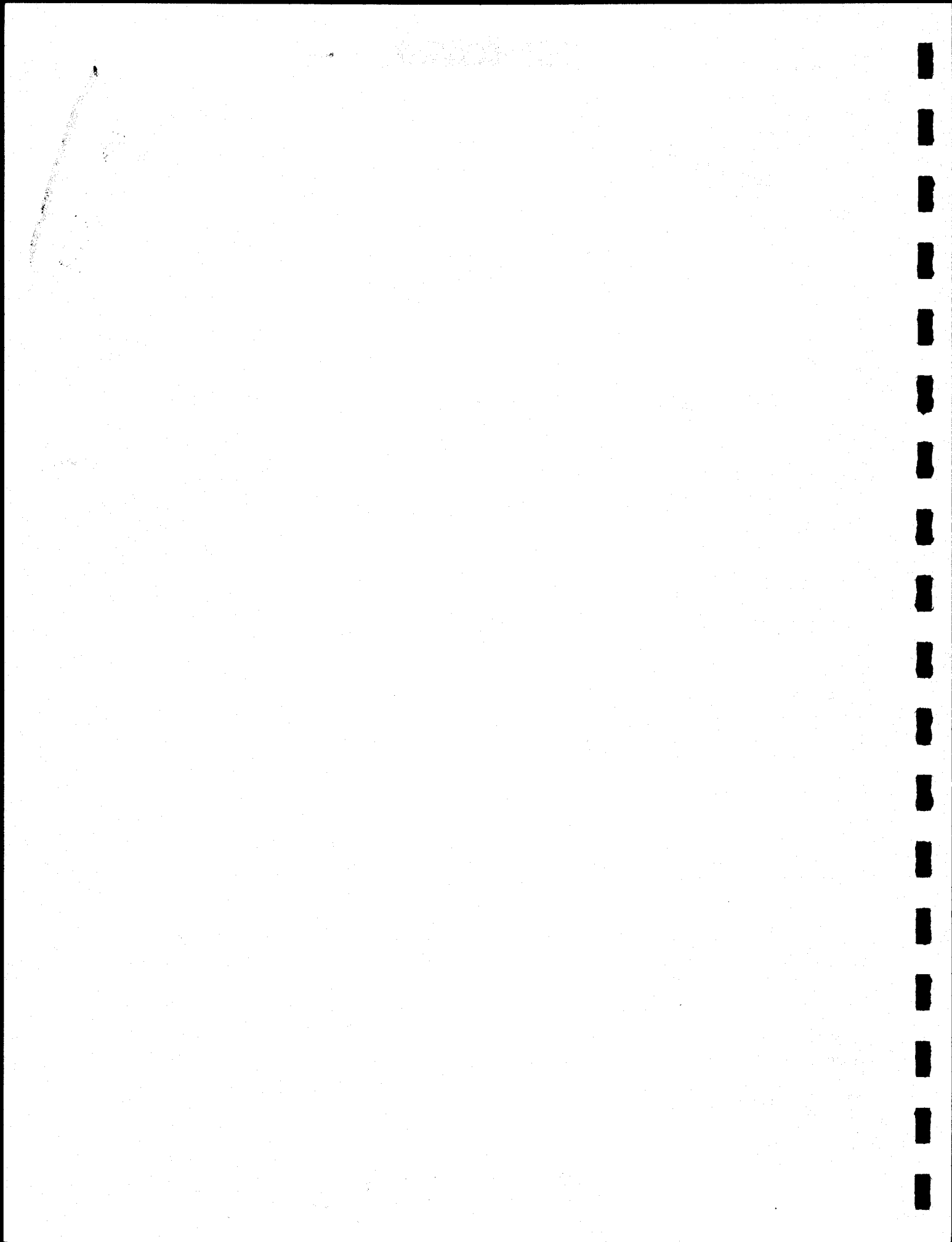
Early in February, the Royal Laotian Government (RLG) had only two
irregular battalions, numbering about 1,400 troops, plus village defense
forces ranging north of the city, to defend Luang Prabang against the

increased number of enemy troops. These RLG forces were later supplemented by 2,000 FAR (Force Armee Royale) troops under General Sayavong, Military Commander of MR I, and later by such guerrilla forces as Vang Pao could spare; however, the Luang Prabang situation continued to remain grim.^{6/}

In Military Region II, under Major General Vang Pao, the situation was no less tense. In essence, what the enemy had done at the real start of his dry season offensive, north of the PDJ, was to overrun most of the friendly major sites of the Lima Site crescent, including LS-57 and LS-80, and on 3 February 1971, Lima 108--a sizable airfield north of the Long Tieng complex. Heavy pressure was put against LS-16--Phou Pha--to the northwest of the complex, leaving to the east only four friendly sites remaining north and northeast of the Plain of Jars: Lima Site 32, by far the strongest of the sites in the area; LS-16, northwest of LS-32; and to the north, Lima Sites 50 and 50 Alpha respectively.^{7/} (Most of these were to fall, be retaken, and fall again, by the end of this report. However, Lima Site 32, the key defensive position north of the Plain of Jars, was never lost to the enemy.)

The Long Tieng complex, as in previous years, formed the primary stumbling block to the enemy's intentions to dominate all of north Laos. It was comprised, in effect by a rough diamond consisting of LS-15 (Ban Na) on the north, LS-20 (Sam Thong) on the west, LS-72 (Tha Tam Bleung) on the east, and Vang Pao's headquarters, LS-20A (Long Tieng) on the south. In addition, LS-5 and LS-14 guarded the southeast approaches to the complex. (See Figure 2 for depiction of the complex.)





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While the NVA/PL presence around Luang Prabang and Long Tieng was political in nature, no question existed that the pressure in the Long Tieng area was militarily important as well. It remained the last block to the plains of Military Region V, the Vang Vieng area astride Route 13-- the only major road linking Vientiane and Luang Prabang. Capture of the complex would provide the enemy with complete domination of all of north-eastern Laos, which then could evolve into a solid domination of any bargaining talks. Such talks had been pending between representatives of the RLG and PL since early in 1970.

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In previous years air power and last minute reinforcements had saved the sites--especially LS-20A--before the onset of the rainy season. In February 1971 the enemy had a three-week head start with their takeover of L-108, Muong Soui, and attacks were launched day and night against LS-15, LS-72, and LS-20, along with limited assaults on Long Tieng itself. These continued through February and March, ending with the imminent loss of Lima Site 15, but the overall complex still held.

Points in Favor

Vang Pao, in February, had but 6,000 friendly troops facing an estimated 8,000 to 10,500 of the 16,500 enemy positioned in MR II. The overall enemy order of battle (OB) in MR II, not including conscripted and minor supporting elements, was estimated as of 5 March 1971 to comprise the following: ^{8/}

- 316th NVA Div (174th and 148th Regts), SW of LS-20, 20A, 15, and 72.

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- 312th NVA Div (165 and 209th Regts), PDJ and S of PDJ, SW PDJ, LS 15 and 72.
- 866th Ind Regt, SW PDJ vs LS 72 and 20A, possibly vic LS-14.
- 766th Ind Regt, Ban Ban, LS 32, Khang Khai vicinity.
- Deuanist Neutralists (pro-Pathet Lao), Xieng Khouang-ville sector.

However, several factors - some of which were significant changes from the previous years' defense against the enemy dry season offensive - worked to the friendlies' favor.

Although the tacair sortie rate was lower than the 1969-1970 dry season rate, several improvements in the management of tacair helped to offset the reduction.^{9/} USAF tacair was better controlled. More Ravens were available to work the strike sorties hitting the enemy in MR II. As the situation around the Long Tieng complex became critical, tacair concentrated on close air support in the complex area. Target boxes were approved by the Embassy, and allowed around-the-clock, all-weather strikes against materiel and enemy staging areas. A new procedure called Loran Targetting Grid Annotated Photography (LT GAP) was added to Combat Skyspot as a means for Instrument Flight Rules (IFR) bomb delivery. In addition, less USAF tacair was offset by a significantly increased Royal Laotian Air Force (RLAF) T-28 sortie rate. Although the T-28s carried much smaller ordnance loads, their pilots were noted for their bombing accuracy and their ability to work their T-28s in confined areas.

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The 30 effective sortie rate for USAF tactical air strikes was raised to 60 effective sorties by Seventh Air Force following definite proof of the enemy's intention to seriously push on the Long Tieng complex.^{10/} Under the urgency of the daily troops-in-contact (TIC) around the Long Tieng-Sam Thong-Tha Tam Bleung-Ban Na diamond, most of these sorties were allocated to the Raven FACs against immediate targets. When targets were not available for Raven control, Barrel Roll-allocated USAF strikes were used against hard targets in the primary battlefield area or along the Barrel Roll LOCs.

The change in the BR sortie rate provided around-the-clock support for the ground forces. By careful scheduling of AC-119 Stingers, UC-123 Candlesticks, the QRF F-4s at Udorn, the Army's OV-1 Spuds and an occasional AC-130 Spectre, U.S. air helped to keep the enemy checked at night. These sorties allowed rapid response to night TICs, enemy troop movements and concentrations and, when the battle situation allowed, accounted for occasional truck kills on Route 7 and other roads west of Ban Ban.^{11/} The night sorties also provided an intangible but critically important side benefit to the friendly ground forces defending their hilltop outposts against an unseen enemy maneuvering in the night. Each soldier knew that the "many motors overhead" of the gunships, flareships, command posts, and reconnaissance aircraft meant that he was not alone and awesome supporting firepower from the air was close at hand. However, the overall effect of this almost complete dedication of available tactical air in BR for the close support role to the exclusion of interdiction will

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probably be argued for some time.

On the ground, other improvements over previous years helped balance the fighting capabilities of the friendlies versus the enemy. General Vang Pao's troops were better trained and better equipped than ever before. To a large extent the decimated Meos were supplemented by Lao Teung and other forces, so that for the first time Vang Pao's command was less than one-half Meo. The irregulars were equipped with the M-16 instead of the carbine, thereby achieving a weapons parity with the enemy's AK-47.^{12/}

Vang Pao, after years of engaging almost solely in roving guerrilla type action, developed a respect for the use of artillery, and began to incorporate it into his battle plans. Artillery fans were set up to cover most of his area.^{13/}

Early evacuation of many of the families of the soldiers to the west delayed the annual "slash-and-burn" season, used by the nomadic Meos to clear land for cultivation. This had the effect of reducing the smoke and haze problem which had plagued FACs and tactical air pilots in their strikes during past years. In the 1969-1970 dry season, visibility was often limited to one-half to two miles in smoke and haze between February and April of 1970. Visual bombing was limited to six to eight hours a day in early March, and on some days, T-28 pilots based in Laos did not have sufficient visibility to take off.^{14/} The problem was delayed, at least through February in 1971, and returning strike pilots reported visibilities of two to seven miles on most days.^{15/} Improved visibility

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not only helped the pilots in their strikes, but also aided FACs and FAGs (ground-based Forward Air Guides) in marking their targets. The targeting, according to a Controlled American Source (CAS) comment, "...for the tacair that's applied, is much better than it's ever been."^{16/} The delay in slash and burn gained the T-28s and USAF strike aircraft an extra month of more effective airstrikes, and in doing so, denied the NVA/PL the mobility they needed for that portion of their campaign.

Early in February, the NVA/PL had an overwhelming numerical superiority of troops in MR II, an estimated 25,600 enemy opposing about approximately 12,400 friendlies. Of these forces, however, the NVA/PL had concentrated only about 8,000 combat and 2,000 more support troops against the Vang Pao stronghold, while General Vang Pao had between 6,000 and 7,100 irregulars and FAR to defend the complex. By mid-March, over 3,400 various reinforcements had been brought in to bolster Vang Pao's defenses, and the enemy did not enjoy his previous numerical superiority in this region. This put General Vang Pao in a far better position to resist heavy enemy assaults.^{17/}

The Value of Air

The situation, however, was critical. In addition to attacks by fire, sapper attacks, and probes against all the major Lima Sites, Ban Na (LS-15), the northernmost site of the complex, was surrounded by up to eight enemy battalions, and received heavy pounding day and night by mortars, artillery, and rockets up to 122mm, from the edge of the Plain of Jars. Its stand against the siege until the end of March undoubtedly contributed to the

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defense of the other major sites.

The fact that it did hold out as long as it did was almost universally credited to air; airdrop resupply by C-7 Caribous and C-123s, medevac by helicopter, and ground fire suppression by A-1s and T-28s along with gunship coverage at night.^{18/} The enemy had ringed the site with 12.7mm heavy machine guns which took their toll in hits on virtually every medevac or resupply aircraft, and it was only the "hosing down" by the escort airplanes that made these missions feasible.^{19/}

At the same time that strikes by T-28s, A-1s, and F-4s were taking their toll on the enemy, F-4s were also hitting the enemy supply corridor, Routes 7 and 71, coming into the Plain of Jars.^{20/} A CAS paramilitary advisor stated:^{21/}

I'm absolutely sure we're hurting them badly with airpower by hitting the supply routes in the PDJ, and using T-28s against the 174th (NVA Regt), in the area of Sam Thong, and to a certain extent against the 165th in the area of Ban Na...A long term analysis of enemy capabilities - he should have been able to take Long Tieng. He should have been able to invest Ban Na. He should have been able to overrun the LS-72 area. They haven't been able to. This is a negative approach, but in my opinion, it's air power that's done it. In fact, I'm absolutely sure of it.

Air cover was supplied Vang Pao's forces on a 24-hour-a-day basis, with the Stingers, Candlesticks, and Spuds at night, and the F-4s, A-1s, and T-28s during the day. Raven FACs controlled airstrikes within the Raven FAC Box, including the Designated Battle Area (DBA), Nail FACs from

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Nakhon Phanom worked Special Operating Area (SOA) 2, and occasionally helped work the DBA, while Tiger F-4s from Korat operated in the high threat SOAs along Route 7 and Route 723 to the buffer zone. The Airborne Radio Direction Finding (ARDF) effort provided assistance in locating enemy forces during periods of enemy offensive activity. (See Figure 3 for depiction of the SOAs.)

Other Factors

Other military, political, and quasi-political factors may have influenced the situation in northern Laos, particularly the situation around the Vang Pao stronghold, and some were difficult to assess. The questions were there. Did the enemy's simultaneous pressure at Luang Prabang divert higher level NVA attention and support so that his efforts in the Long Tieng area were affected? Would the forces drawn from Vang Pao's army to defend Luang Prabang prove to be a critical loss to one of the Lima Sites? General Sayavong could produce only 2,000 of the 6,000 FAR forces on his obviously padded payroll for the defense of Luang Prabang, and it was necessary at one phase of the campaign, when the NVA/PL made a particularly heavy thrust at Lima 54 airfield, for Vang Pao to send a battalion of his irregulars to assist in repelling the enemy.^{22/} It had previously been hoped that a FAR battalion could be moved to support Long Tieng, but General Sayavong refused. Eventually the reverse proved to be true; Vang Pao had to send troops to the aid of Sayavong.^{23/}

Operations in the panhandle, notably the Army of Republic of Vietnam (ARVN) LAM SON 719 incursion into Laos south of the Demilitarized Zone (DMZ), and smaller guerrilla battalion operations could have been instrumental

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in diverting troops and supplies from the NVA/PL intentions to the north. Opinions by USAF intelligence analysts, operations specialists, CAS officials, and Air Attache personnel differed, and there was no agreement as to the effect of these other operations on activities in northern Laos. ^{24/}

In late February 1971, a plan was being studied in Vientiane whereby Vang Pao would institute a "spoiling action", sending troops to the east and north behind the NVA/PL forward forces in order to make the enemy turn his back on the prime targets. As of the end of March 1971, the proposed action had not started. ^{25/}

Friendly and enemy initiated patrols and probes continued in varying degrees of intensity through March, and the four main Lima Sites remained under continued attacks by fire. Lima Site 15 was to fall later, but as of 1 April 1971, none of the major Long Tieng complex sites had fallen.

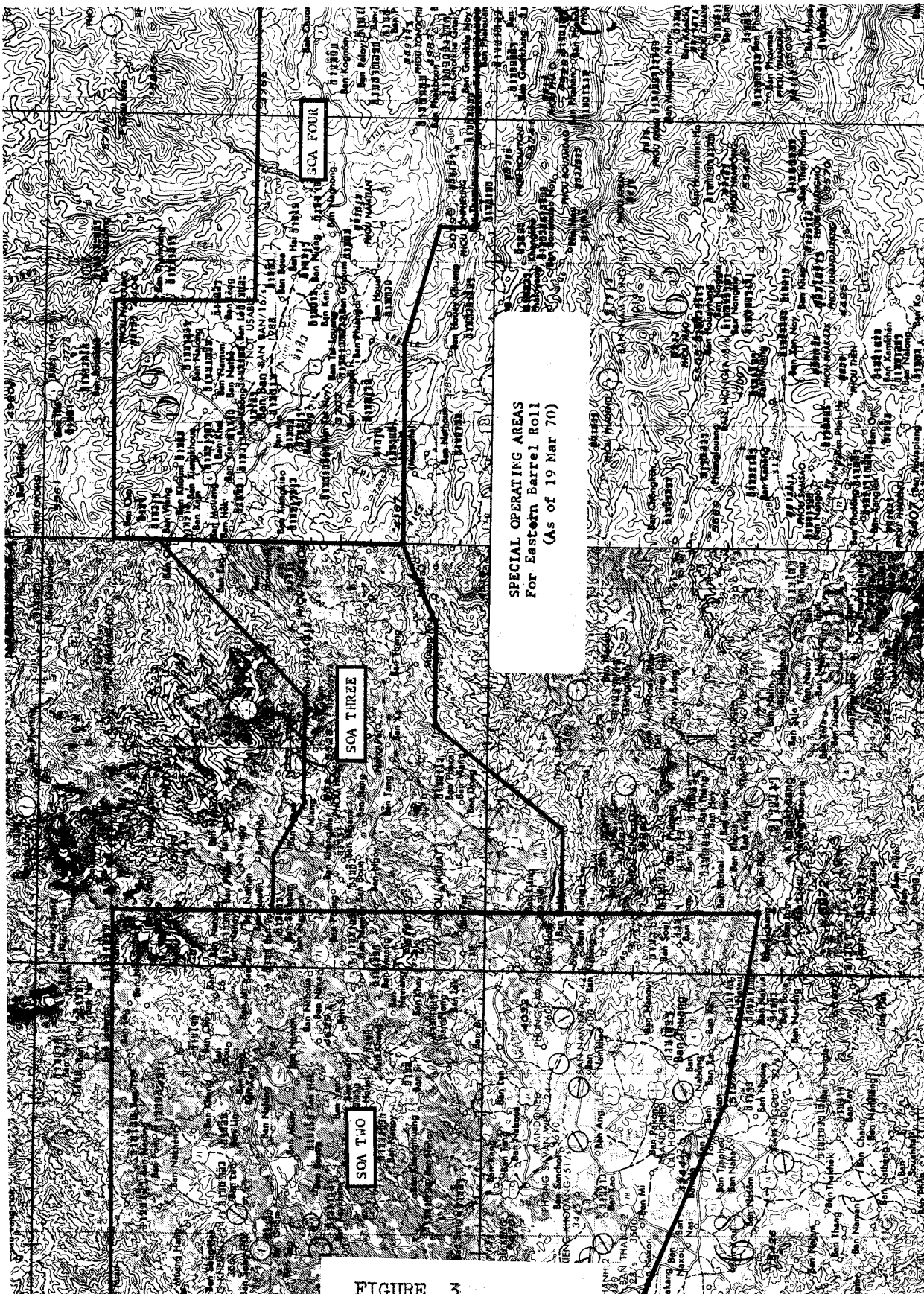
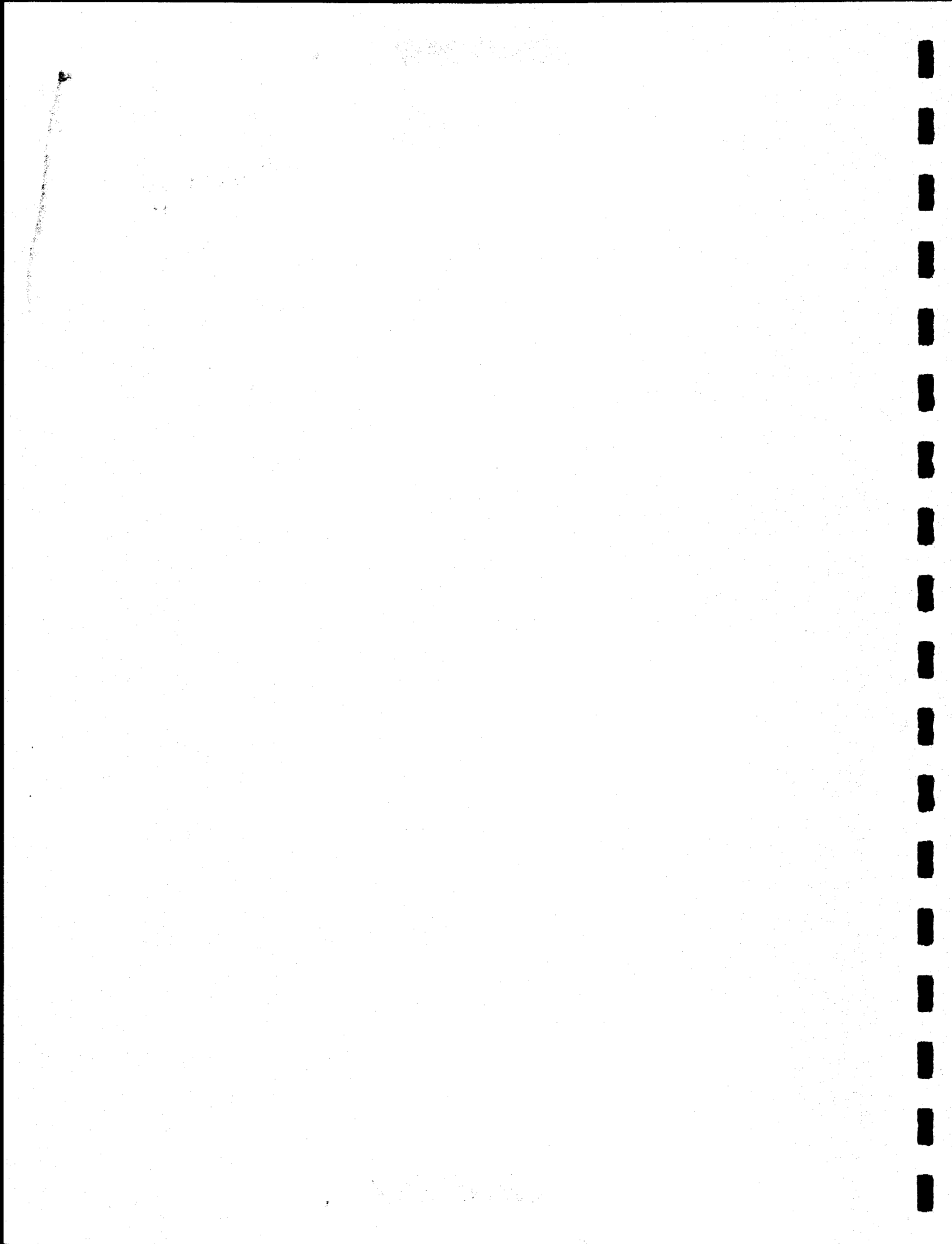


FIGURE 3

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CHAPTER II
THE WAR IN NORTHERN LAOS

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The war in Northern Laos had ominous portents as the dry season of 1970-71 began.^{26/} The wet season offensive just concluded by Major General Vang Pao's guerrillas had been a hard-fought campaign achieving limited objectives against a determined North Vietnamese Army (NVA) force supplemented by some Pathet Lao (PL). From the slopes adjoining the Long Tieng (LS-20A) airstrip, the enemy retreated slowly to the southwest rim of the Plaine des Jarres (PDJ). They gave up the traditionally Lao Neutralist headquarters at Moung Soui (L-108) to Vang Pao's Operation LEAP FROG, but only after 40 days of attacks and counter-attacks. The enemy resisted Operations LEAP FROG and COUNTERPUNCH II from August until October before giving up Ban Na (LS-15) and the twin peaks of Phou Seu on the southwest rim of the PDJ.^{27/} The start of the dry season, which favored the enemy's advances, found the NVA/PL entrenched further west than ever before at that time of year. They held pockets of resistance in friendly territory and were building up troops and supplies on the PDJ. Vang Pao's exhausted guerrillas returned to the defensive after their wet season campaign had gained them only about 30 kilometers.

As in previous offensives, Vang Pao's army relied upon U.S. and RLAF tactical air support and airlift to push back the larger, better-equipped PL/NVA force. F-4s, A-1s, and T-28s helped repulse the enemy as they threatened Long Tieng in March 1970. The enemy's long siege of Bouam Long (LS-32) was broken with the aid of tactical air. There the fighters

were applied to support troops-in-contact (TIC) or struck against crew weapon pinpoint targets or target box areas established over enemy concentrations. In August, Raven FACs were used extensively for visual reconnaissance and to identify suitable helicopter landing zones (HLZ) in preparation for Vang Pao's Operation LEAP FROG, a push toward the PDJ.^{28/} USAF and U.S.-contracted transports and helicopters moved guerrilla forces to attack positions near ground objectives such as Ban Na. Airlift was also provided to infiltrate/exfiltrate raiding parties which destroyed the enemy's supply complexes. The guerrillas knew that during night TICs USAF or RLAF gunships could be called upon for heavy fire support. The enemy, on the other hand, moved slowly over water-soaked roads. Whenever he concentrated troops, they were vulnerable to airstrikes; when he massed supplies, the caches might be destroyed or seized by helicopter-supported operations.

The 1970 wet season ushered in several changes to the way forces friendly to the Royal Laotian Government (RLG) fought the PL/NVA. Using Raven FACs for fire adjusters, Vang Pao and his army of irregulars gained experience in the use of artillery. The RLAF AC-47s flew more frequently, flew further from their bases, and achieved a greater effectiveness supporting ground troops. Changes in the way the USAF supported the ground fighting took the form of new force application techniques and new ordnance.^{29/} Side-looking airborne radar (SLAR)-equipped Army OV-1s teamed up to feed almost real-time truck targets to AC-119s. A quick reaction force (QRF) of F-4s was on continuous alert at Udorn for use against perishable targets

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and to support TICs. Loran targeting was being developed for all-weather bombing and a new SAC radar with special flight tracking features at Udorn improved IFR bombing in Northern Laos. A newly developed, significantly improved antimateriel cluster bomb, CBU-38, and the highly accurate high-drag bombs commonly used in Vietnam were introduced into the war in Northern Laos. All-in-all, the USAF was achieving greater effectiveness from fewer sorties applied to the Northern Laos war.

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The way in which the USAF supported the RLG with a 1970 wet season sortie rate drastically reduced from that of the 1969 wet season was the most significant development in the air war in Northern Laos in the wet season of 1970.^{30/} A daily sortie rate which had gone to over 200 was, by the end of the wet season, more-or-less pegged at about 30.^{31/} That lowered sortie rate was addressed in the CHECO report "Air Operations in Northern Laos--1 Apr - 1 Nov 1970."

The NVA Moves to the Offensive

In the last days of the 1970 wet season, elements of Vang Pao's army of Meo guerrillas and some companies of Forces Armee Royale (FAR) had inched to the limits of their offensive.^{32/} Ban Na and the twin peaks of Phou Seu on the southwest of the PDJ were taken. These locations, plus Moun Soui (L-108) to the northwest and Khang Kho (LS-204) to the southeast, delineated the furthest forward advance that Vang Pao was to achieve. This delineation, however, was in no way like the front lines of conventional ground war. These mountaintop and airstrip sites were won in

hard-fought battles in the surrounding expanse of jungle where considerable numbers of the enemy still roamed freely.

At the beginning of the dry season, which traditionally favored the enemy's offensive, the NVA moved quickly to counter the guerrillas' recent gains. On the morning of 1 November, the day arbitrarily chosen for the start of this report of the dry season war in Northern Laos, the enemy overran several of the mountaintop positions on Phou Seu.^{33/} A hundred rounds of 105mm artillery fire, probably from the plains below, were fired into the positions after midnight. In attacks launched throughout the night, three battalions of NVA swept friendly troops from several of the peak's higher outposts. Over at Ban Na, the friendlies occupying positions there endured a night of artillery fire lobbed in from guns to the north and northwest.^{34/}

The enemy also increased his efforts to repair rain-damaged roads into the PDJ area to support his dry season surge of men and materiel. Old routes were repaired where possible and bypasses were built around obstructions too formidable to remove. Some interdiction points (IDPs) were cleared by hand.^{35/} In addition, a bypass, Route 723, paralleling Route 7 from the Fish's Mouth on the North Vietnam border to the PDJ via Xieng Khouangville and Route 4 was pressed toward completion from both ends. The enemy was seeking a way to end his almost total reliance upon Route 7 as his line of communications (LOC) for his forces fighting Vang Pao. As his road work proceeded, traffic increased from light foot traffic over

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certain short segments in November^{36/} to moderate to heavy truck and foot traffic throughout the LOC structure in January.^{37/}

As the enemy's resources in the PDJ area increased, so did his pressure against friendly Lima Sites. Before November was over the enemy began to fortify his newly won positions on Phou Seu. Hill 1470, three kilometers north of Ban Na, was taken by the enemy on 14 November, lost on the 15th, and retaken on the 16th. Friendly forces attacking again on the 19th, found that the enemy had abandoned it.^{38/} Such attacks and counterattacks attested that the enemy was close by and a constant threat to site security.^{39/}

Continual patrolling, harassing, probing attacks, and shelling characterized the enemy's efforts against sites west and southwest of the PDJ as he prepared for more aggressive action in early February. No significant changes occurred in the occupancy of sites in the PDJ area from November through January.

Vang Pao's Spoiling Action at Ban Ban

Friendly intelligence indicated that as of November the enemy resupply surge was resulting in an even greater stockpiling in the enemy's supply complexes along Route 7 east and west of Ban Ban. This area had long been the area of primary interest for interdiction in northern Laos by 7AF. The value of the area also as a target for a spoiling and interdicting raid became apparent to Vang Pao and the officials responsible for the U.S. support provided to the guerrilla army.

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In mid-November, Vang Pao, Ambassador G. McMurtrie Godley and high-ranking CAS officials developed plans for Operation COUNTERPUNCH III aimed at the Ban Ban area. Headquarters 7/13AF at Udorn worked out plans for air support.^{40/} The plan called for friendly paramilitary forces moving from Bouam Long (LS-32) on the north side and forces heli-lifted into San Tiau (LS-2) on the south side to pinch off Route 7 east of Ban Ban and to destroy supplies cached in the area. The heli-lifted forces would have to come from the defense of friendly Lima Sites, but the existing level of enemy threat and the defensive preparations of such sites made the temporary use of some of the troops defending them an acceptable risk.

In addition to helicopter support, an increased tacair effort was required. The established allocation of 30 USAF fighter-attack sorties for Northern Laos had been set with the understanding that additional strikes were obtainable for crises or special requirements.^{41/} Clearly Operation COUNTERPUNCH III was planned to be of sufficient size and scope to warrant a significant increase in the daily tacair sortie rate provided by Seventh Air Force.

The execution of COUNTERPUNCH III was fitful and suffered from marginal weather. The operation began on 26 November with USAF helicopter lifting 40 paramilitary Commando Raiders and the Forward Air Guide (FAG) BADMAN into the LS-2 area to secure HLZs for the main force to follow.^{42/} Ground fire and marginal weather, however, delayed the operation. A last-minute change of HLZs was made by CAS, but weather and faulty execution precluded proper zone preparation by tacair. The delivery of friendly troops to the

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north force returned to LS-32; the south force moved overland to positions approximately four kilometers southeast of Xieng Khouangville.^{44/}

When the Operation was concluded, its effect was held with divergent views.^{45/} Headquarters 7/13AF, felt the effort had minimal effect upon the future enemy offensive. According to a CAS official, the Ambassador however, felt the spoiling action had set the enemy back a month in his dry season timetable.^{46/}

The Enemy Attack Intensifies

As the season progressed, the enemy's pressure against friendly-held sites west and southwest of the PDJ escalated. One prominent site, not critical to Vang Pao's defense plans, was overrun; the guerrilla strongholds of Ban Na, Tha Tam Bleung, Sam Thong, and Long Tieng were probed and attacked by fire; some nearby friendly Lima Sites and defensive outposts fell.

Moung Soui (L-108) fell to the enemy on the night of 2-3 February.^{47/} The defenders were a battalion of the Forces Armee Neutral (FAN) which the RLG had placed there to restore Neutralist presence in a traditionally Neutralist area.^{48/} The site had been taken from the NVA by the guerrillas during the previous wet season. Little action occurred in the area until the enemy began probing actions in late January. The attack began the night of 2-3 February against L-108 and Phou So (LS-57), fourteen kilometers north.^{49/} Five enemy PT-76 tanks reached L-108 outposts at 0200 hours and infantry arrived an hour later. Beginning at 0306 hours, the

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attack was pressed with 200 rounds of 122mm rocket fire, 82mm mortar fire, the tanks' guns, and the infantry advance. Shortly after 0600 hours the defenders withdrew toward Phou Fa (LS-16), abandoning the MOUNG SOU area to the NVA and leaving behind four 75mm pack howitzers.

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Action against the heart of Vang Pao's defensive positions, LS-15 LS-72, LS-20, and LS-20A, became critical as of early February. In particular the NVA pressed against known FAG positions in the area. The FAGs were the contact with the Raven FACs, who controlled the tactical air directed at the enemy. LS-15 was subjected to increased harassment by 122mm rocket and mortar fire. On the night of 5-6 February, an NVA sapper unit got onto Skyline Ridge between Sam Thong and Long Tieng and destroyed the low frequency air navigation radio beacon.^{50/} Eighty-five millimeter howitzers were brought into the area, and artillery fire damaged a friendly 155mm howitzer. On the night of 6-7 February, eight outposts guarding the eastern approaches to Long Tieng were lost.^{51/} Throughout the day and night of 7 February, LS-15 and friendly positions on Phou Long Mat took shelling by the enemy. LS-15 faced encirclement by NVA battalions and enemy 12.7mm automatic weapons were brought in to restrict its aerial resupply.^{52/} Long Tieng received five 122mm rockets at dawn on 13 February. At predawn on the 14th, the NVA again rocketed key defensive positions and overran a 105mm howitzer position south of Long Tieng.

The U.S. Tactical Air Surge

The heavy increase in enemy activity brought a doubling of the fighter-attack air effort in defense of Vang Pao's Lima Site strongholds.^{53/} The

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USAF sortie rate for F-4s, A-1s, plus gunships flown for Barrel Roll, had been fairly stable, averaging 30 per day from 1 November until early February when the rate jumped to an average of 58 until 31 March. The USAF tacair daily sortie rate flown in support of just MR II and Vang Pao for approximately the same period rose from 15 to 24. The RLAF combined T-28 and AC-47 daily sortie rate flown for Barrel Roll increased from 45 to 77 from 1 November to 31 March. Within MR II, for approximately the same periods, the Lao doubled their effort from 22 per day to 44.^{54/}

As the marginal weather of the first few days of February improved, the Ravens concentrated almost exclusively on close air support and troop concentrations. Visual reconnaissance (VR) was drastically reduced because of the concentration on site support. There were attacks and shellings against at least one of Lima Sites 15, 20, 20A and 72 more or less at all times. With the pressure on Vang Pao's positions increasing as expected, the flexibility provided for by the 7AF Commander in setting sortie allocations had arrived. With reduced forces the 1971 7AF Commander, General Lucius D. Clay, Jr. could provide sorties only for targets which could be justified as worth an A-1 or F-4 sortie and for which suitable control would be provided. Requirements to support TICs were fulfilled by AC-119 gunships with a scheduled nightly sortie rate that rose to five and by a quick reaction force (QRF) of from six to twelve F-4s at Udorn.

To further concentrate the available daily rate of 60 USAF sorties in the defense of Vang Pao's strongholds, the Air Attache (AIRA) in Vientiane, Colonel Hayden C. Curry, on 11 February established, with the

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Ambassador's approval, a Designated Battlefield Area (DBA) as the area around Vang Pao's strongholds into which almost all tacair would be directed under Raven Control.^{55/} The area was a six-sided polygon and was of sufficient size and located to cover any mortar or rocket locations that could pose a threat to Lima Sites 15, 20, 20A, and 72. Inside the DBA there were fan-shaped areas that could be covered by artillery from the friendlies' four fire support bases. Although on a smaller scale, the DBA was similar to that established for Hammer FACs for Operation Lam Son 719 in Steel Tiger.

The Designated Battlefield Area was supported by both 7/13AF and 7AF and was still in effect as of 1 April, and although LS-15 was on the verge of cracking, the Lima Sites were still in friendly hands. How successful the priority area concept was in defending the sites was difficult to appraise. In the words of an AIRA operations staff officer,^{56/} "I think it depends on whether the ground people want to fight or not." Through 1 April the site defenders did little to press the enemy. In their well-fortified positions at LS-20, 20A, and 72 they withstood shellings by rockets and mortars and suffered relatively few casualties. At LS-15, however, three battalions of friendlies were encircled by eight battalions of NVA and were subjected to daily, heavy shellings that by 1 April had cost the friendlies almost 400 casualties.^{57/}

The RLAF Surge

The RLAF share of the fight against the PL/NVA increased significantly in the critical months of February and March 1971. Long-established goals of 3,000 T-28 sorties and 150 AC-47 sorties in a month were attained and

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exceeded in both months. Figures available for the eight-week period, 4 February through 31 March, show that 6481 T-28 sorties and 443 AC-47 sorties were flown in all Laos.^{58/} Three ground actions required heavy RLAF support in this period and gave the impetus to achieve the record sortie rates. From 16 February to 23 March, Operation DESERT RAT, a four irregular battalion effort to interdict Routes 23 and 238 of the Ho Chi Minh trail in MR III, was supported primarily by RLAF air.^{59/} Beginning about 20 March, increased enemy pressure on Luang Prabang in MR I caused RLG ground and air resources to concentrate there in defense of the royal capital.^{60/} In defense of the Vang Pao Lima Site stronghold the RLAF surge was most readily apparent. For the first six weeks of the eight-week period cited above, the T-28s and AC-47s averaged 49 and three sorties per day, respectively. For the last two weeks of the period, after Luang Prabang was threatened, the support for Vang Pao dropped to an average of 21 T-28 day sorties and one AC-47 night sortie each day.^{61/}

The close air support given the ground forces by the T-28s was considered by AIRA to be excellent. Their accuracy made them the favorite of their countrymen, the FAGs, who directed the strikes from positions with the ground forces. According to CAS reports, the Tiao Pha Kaos (pron: Cha Pa Kow-ah, or White Gods), call-sign of the Long Tieng and Vientiane T-28s, inflicted severe damage upon the enemy in the defense of the Lima Sites and outposts in Northern Laos. Certainly the RLAF T-28s deserved great credit for the defense of the Long Tieng complex. It should be noted that the all-MR T-28 sortie rate averaged over 100 sorties per day,

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and that the rate was accomplished with only 35 aircraft and 40 pilots.^{62/}
USAF personnel working at Lao bases and providing maintenance support to these aircraft also deserved notice and credit. Without these Air Force personnel such an all-out effort on the part of the RLAF would not have been possible.

The RLAF AC-47 Spookies became more effective and provided critical support as the enemy's dry season offensive intensified. As the dry season began, crew-related problems detracted greatly from the RLAF gunship capabilities.^{63/} Crews scheduled for alert duty period strolled in when they found it convenient, and then left the alert area for meals. Although radio operators had been given basic instructions suitable for dead reckoning and pilotage navigation in Laos, the pilots relied entirely on TACAN and would not range farther from the station if the cockpit navigation information became "unlocked." Because the money from selling scrap ammunition shells was divided among the crews and RLAF base officials,^{64/} generally all of the ammunition was expended on every mission, with or without suitable targets. The fast fire rate was usually selected, again, irrespective of targets, and greatly increased the cost of replacing barrels, batteries, and guide bars, not to mention ammunition. Improved performance by the crews in all of these areas was achieved throughout the dry season as the RLAF slowly continued to come of age. Prodded by a U.S. AC-47 advisor, the crews were made to feel a firmer commitment to their alert responsibilities, to conserve the guns and ammunition, and to navigate to targets without TACAN assistance.^{65/} The RLAF gunships' effectiveness in the dry season of 1970-71 was indicated by their ability to respond quickly to

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calls for TIC support in the Long Tieng complex. The Spookies and the AC-119 Stingers from Nakhon Phanom, and an occasional AC-130 Spectre from Ubon, teamed up to provide night coverage over the Long Tieng complex in the critical period of mid-February.^{66/} The proud words of the U.S. advisor with the RLAF AC-47s further indicated their effectiveness:^{67/} "Very seldom will they (the AC-47s) get secondary targets. It's all primary TIC."

Attack on Long Tieng

As it had in March 1970, Long Tieng became the focus of exciting action in the 1971 enemy offensive. Enemy pressure against and around Long Tieng increased during January and early February. In the second week of February, the action was characterized by daily shellings and mortarings, sapper attacks against targets such as the air navigation radio beacon and friendly howitzers, and ground attacks that overran several Long Tieng outposts.^{68/} (See Figure 4 which shows Long Tieng to the NW.)

Dramatic action occurred on 13-14 February.^{69/} Beginning at 0600 hours, the enemy fired 122mm rockets that hit Long Tieng, killing two friendlies. Three NVA sapper companies infiltrated into the area south of Long Tieng and were able to silence a 105mm howitzer. This in turn allowed the enemy to set up mortar positions that provided him coverage of the site's strip and cantonment area and the adjoining village. The subsequent shelling of the Air America, CAS and AIRA facilities by a variety of rockets, artillery, and mortars resulted in a suspenseful day and night for the U.S. personnel who worked at Long Tieng.

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Long Tieng, Headquarters of Military
Region II in Laos and Capital of Xieng
Khouang Province.

FIGURE 4



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One of the Ravens who experienced the shellings reviewed his activities
of 13-14 February: ^{70/}

We had a little bit of forewarning on the night of the 12th-13th. About six A.M. on the thirteenth we took about five or six rockets. They came down the valley; we all heard them. I heard the first whistle go over the top, and I was under the bed. We had been rocketed before, but not for several months, so we knew they were close enough to do some damage.

We went out and looked the area over as usual and found they had come from southwest of Sam Thong, up in fairly rugged karst. Very difficult to see anything. Early that afternoon there was a report from a patroller straight west about three miles out, that he had spotted 200 enemy close to the river. I worked over the area most of the afternoon--two flights, about four hours. Before that I don't know how many flights of air: lot of Tiao Pha Koas and F-4s, and I believe some A-1s, too. We covered the area pretty well. The reports we got later said it was actually about 20 men; I don't know.

We knew they were close, and that day our line chief along with the AOC Commander and a couple of crew chiefs got together and built us a beautiful bunker. It was a dandy; just everything right. They put it up in the afternoon. They just worked like crazy, and I'm glad they had it.

That night they had moved a friendly 105 howitzer--I believe; I'm not quite sure--up by the King's house on a ridge just south of the base itself, firing H and I, harassment and interdiction, firing all night long to the west. We could hear it boom every 60 seconds, two minutes, or so. Sometime during the night, I believe about midnight, we had an alarm, but I don't recall what it was for. It was a false alarm. We stayed up about an hour, manned the windows, and then went back to bed.

The American compound up there is in a slightly elevated position; there is a large karst peak rising very rapidly on the north side and a small one on the southwest side, which has a .50 calibre machine gun bunkered position. The perimeter of the American compound is fairly ill-defined. Some of the Americans

(CAS)----their command post has concertina wire around it. Our BOQ is a two-story concrete block that faces south...So what we would do is a few people would go to the corner windows upstairs and keep track of what was going on. We were armed with our M-16s, two M-79 grenade launchers, and a box of hand grenades. Some were issue; some were strictly scrounge-type weapons.

About 3:30 that morning I was awakened by increasing explosions, rather rapid and rather close, that didn't sound like a 105. It sounded more like a mortar. From my side window I could look out and see flashes up on the hill by the King's house and someone said there was a firefight up on the hill. I thought it was friendly mortars shooting at this ridge, but in fact it was enemy guns shooting at us with a small ridge in between us, the back side of which I couldn't see, and I heard they were DK-82s. They were coming from two different spots, though.

We watched until about 4:00 when someone yelled "Incoming, hit the bunkers." We ran out the door and down the stairs. We had several locals there, our house boys, who came to see what was going on. They kind of clung close to us. And about that time the first rounds hit. They were almost direct hits. I guess they had just swung the tubes around. Apparently one of our people saw the gun fire. They say with the DK-82 you can see it trail fire behind it when it's coming to you. It's rocket-type charge that burns. There were three DK-82 positions firing on us directly and later I heard it was six positions, mixed DK-82s and 60mm mortars. Besides that we came under rocket attack at about the same time. The debris we picked up indicated 107, 122, and 140mm rockets were coming in. The charges were going off every few seconds. They seemed to be hammering the American compound.

As soon as they got the friendlies to abandon their positions on the south, which they did, they swung the barrels around, put them over the ridge, and fired directly into us. Some of the wooden EM quarters took a few direct hits, just random rounds, but by that time everyone was in the bunker. The bunker was great; I can't say enough for it. One round hit on top of us, but no problem...I stayed in the bunker probably about two hours.

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As the shelling and rocket-firing died down after about an hour and a half--about forty or fifty B-40 rockets had been fired at us which means they were fairly close to us, possibly in the village we sent a couple of people out to look out the back windows, because in the bunker we were blind; we didn't know what was going on. We fully anticipated a sapper attack to follow...It was dark and hazy but our people did report seeing what they were sure were enemy firing in the village. They fired .50 cal machine guns against the hill, trying to silence the mortar positions.

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With the coming of dawn I recommended to Mr. Rostermount, I was acting senior FAC--that Raven 24, Lt Swedberg, or myself move into the forward position in the rooms to direct any airstrikes that might come in. We were the two most experienced. He said "fine" and Lt Swedberg went in and I followed about five or ten minutes later. The fighters actually did come in.

Let me back up here a minute. We did have a Spooky in the area after the first rounds hit, a Lao Spooky. On his first rounds he was a long way away; we could hardly hear him. Then he moved in closer; then he left. I don't know why. Maybe he was out of ammo. We were virtually without any air cover for an hour and a half. This was the morning of the 14th. So, we didn't get any other gunship support at all that day.

As soon as it got light enough we got a flight of F-4s checked in overhead. Lt Swedberg, myself, a radio operator, and an Intel sergeant tried to establish contact with a portable Fox Mike radio relaying through Cricket (ABCCC) with UHF to the fighters, but it didn't work, so we used the survival radio...and it worked out well; we had them loud and clear; they had us loud and clear. As the dawn came up, the enemy pulled back.

Two Ravens launched out of Vientiane...They came overhead at first light. As the dawn came up the enemy fell back. We were unable to actually locate any of them. Because they were through, we were able to leave the base. Air America came up and evacuated their wounded by helicopter. One American had been wounded by the first shell. We were able to go down and fly out all of the O-1s except one that was damaged.

I stayed and directed airstrikes that morning; cycled out of there most of the day, then went back to Vientiane. That night and the next day when most of the first people who had gone directly down had changed aircraft, some came back to relieve me. So we were able to keep our coverage in there; we didn't miss a day.

When asked about the villagers who populated Long Tieng, the Raven's account^{71/} was reminiscent of the description given by an eye witness^{72/} during the March 1970 attack on the village:

Most of the village had left by that time (time of the shelling). They headed south. There's a road down that goes most of the way, and a bridge across the river. Some of the villagers are left. Sometimes they'll go out of the valley, and live in the hills at night and come back in the daytime. But the greatest majority of them are gone. Stores were depleted. They just packed up and left.

The F-4s that were contacted by the Ravens aided in repelling the attack on the American compound, but with some unfortunate consequences.^{73/} The flight of two fighters was armed with CBU 24/49 and had been diverted after gunship escort duty in Steel Tiger.^{74/} Upon arrival over TACAN channel 108, the flight was instructed by ABCCC to contact Raven Control, in this case a Raven controlling airstrikes from a ground position. With the desperate ground situation, the controller was hoping for any tacair support and felt that the location of friendly troops would allow a CBU 24/49 drop.^{75/} The first F-4 dropped two CBU-24s and one CBU-49 which although not exactly on target, helped to break the enemy's attack.^{76/} The second F-4 delivered its ordnance well off target, right into the American compound. The resulting explosions and delayed

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explosions of the bomblet units, plus the havoc wrought by the enemy's shelling, resulted in almost an hour of chaos. Another F-4 flight with suitable ordnance could not be worked due to the confusion and had to return to base without expending.^{77/}

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The RLAF T-28s stationed at LS-20A gave further evidence of how critical the situation had become and also showed the courage of their pilots. In the darkness of predawn, the T-28s took off without lights and expended ordnance on the enemy before flying down to Vientiane (L-08) to rearm and start their day-long cycle of strikes.^{78/}

With daylight, however, the enemy pulled back and did not launch the second, larger attack which the LS-20A defenders expected.^{79/} Later, an NVA soldier that "walked into friendly hands" provided information on the force that had attacked LS-20A and explained, probably, why a larger assault had not materialized.^{80/} The attacking units were three companies of sappers. The members of the force were straight from training in Hanoi and had been positioned to infiltrate and attack the artillery and outposts south of LS-20A. The same informant said that pressure would continue against LS-20A, but the enemy's next main objective was LS-15.

The Enemy's Pressure Persists

The enemy's efforts to build and prepare for his 1971 dry season offensive resulted in a force of approximately 10,000 men arrayed in varying degrees of concentration in and around Lima Sites 15, 20, 20A, and 72.^{81/} The battalions pressing the Vang Pao Lima Sites from the

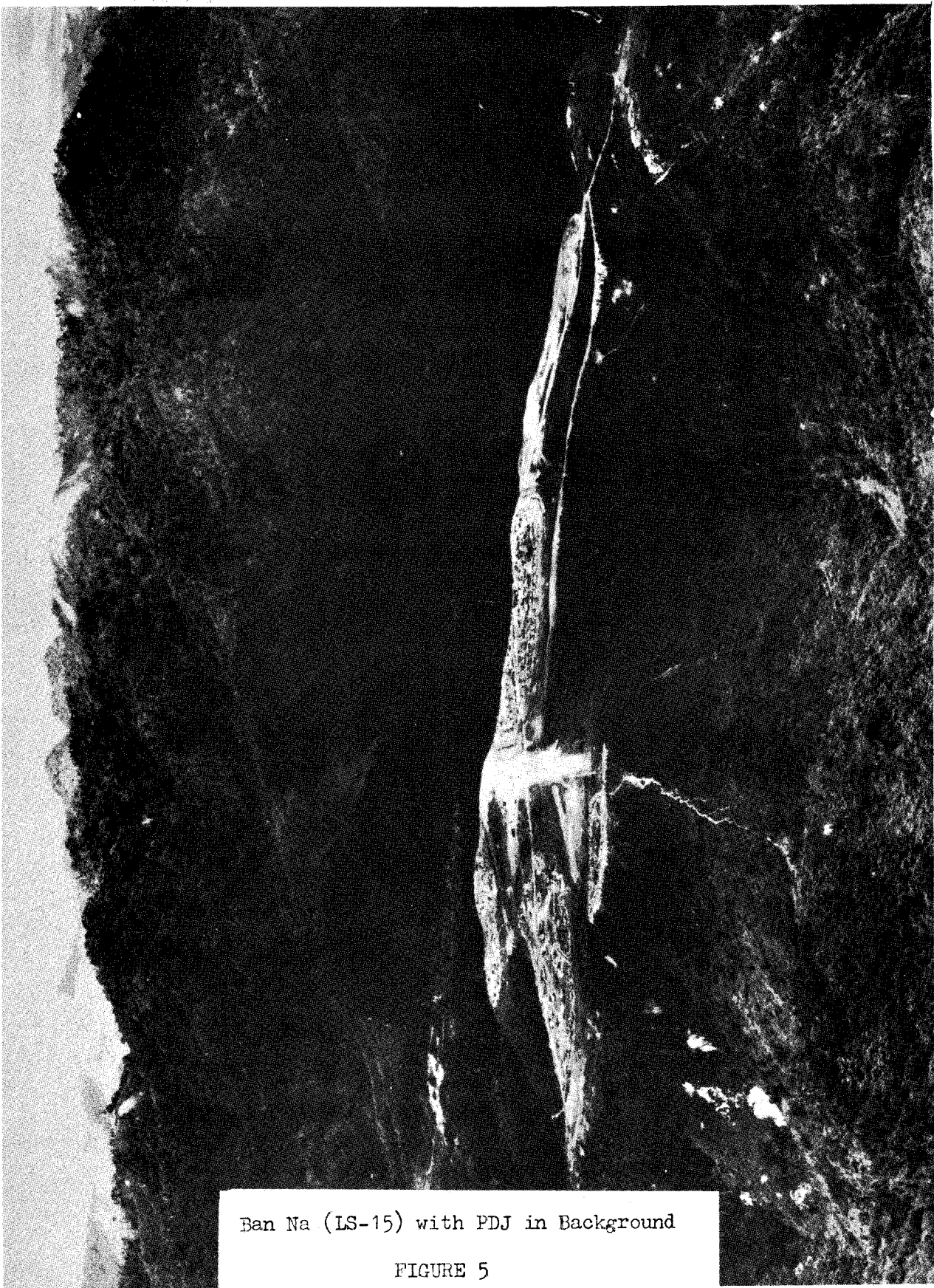
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east, or PDJ side, seemed to be adequately supplied in the field, but battalions pushing in from the west had some supply problems.^{82/} Medical supplies for their wounded were difficult to provide; each soldier was operating with less than a basic load of ammunition; the supply for 82mm mortars was down occasionally to ten rounds. Crew-served rockets, mortars, and howitzers were successfully brought forward with the enemy. An antiaircraft (AA) capability with 12.7mm and some 14.5mm automatic weapons was also positioned with the attacking enemy forces. Heavier AAA, at least through the end of March, had not been carried into the four Lima Site stronghold areas.

The enemy's tactical battle plans throughout February and March concentrated on attacks by fire against the four Lima Sites.^{83/} After LS-15 was encircled late in February, it became the object of a daily shelling by 85mm and 122mm artillery from the western PDJ. Some days the site was also struck by 82mm and B-40 mortars and 82mm recoilless rifle fire. (Photo, Figure 5, shows LS-15, looking over hills toward the Plain of Jars.) Lima Sites 20, 20A, and 72 were subjected to days of sporadic attacks by fire. At LS-20 and 20A the principal threat was attacks by 122mm rockets, fired a few at a time or many in a barrage, and on some days not at all. The enemy's targets were the well-prepared friendly troop positions and the sites' airfields. Occasionally aircraft on the ground were damaged, but none could be considered destroyed. The enemy's greatest success against aircraft on the ground occurred in the last week of March when an Air America Helio Porter and an RLAF H-34 were damaged at LS-20A.^{84/}

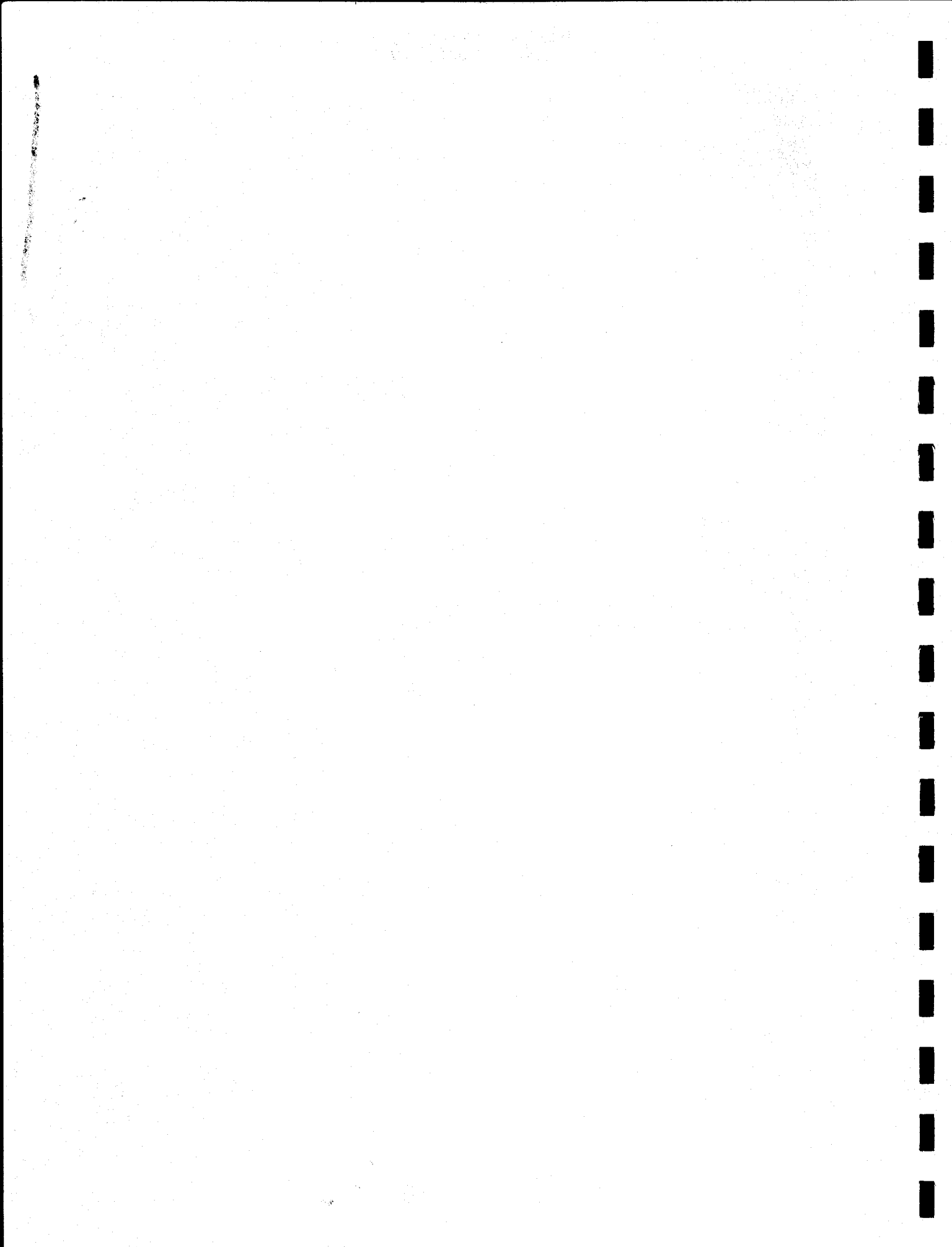
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Ban Na (LS-15) with PDJ in Background

FIGURE 5



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Ground operations by the NVA had resulted in a fairly stable deployment of battalions threatening the four Lima Sites by the middle of March. They successfully overran friendly defensive outposts down to within seven kilometers northeast of LS-20A, six kilometers northwest of LS-20, and five kilometers south of LS-72. From the middle of February on friendly intelligence agencies considered a major ground thrust by the enemy to be imminent, but by 1 April none had occurred. Minor probes and clashes were undertaken by both sides, each hoping to find a weakness to be further exploited, but none of the four Lima Sites had been required to withstand a major ground assault as the period covered by this report ended.

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Tac Air Defense of the Lima Sites

The defenders of the four Lima Sites, and the agencies supporting them responded to the enemy's pressure and hoped their efforts would be adequate to hold the sites until the wet season returned. For the guerrilla forces, reinforced with additional guerrilla and FAR battalions from MR III,^{85/} this generally meant hanging on to the Lima Sites and their outposts, meeting the enemy's ground probes, counterfiring at rocket, mortar and artillery locations, and launching occasional probes at the enemy. For those responsible for tacair support it meant day-by-day evaluation of how the allotment of sorties could best be applied to support TICs, destroy enemy artillery, provide escort resupply and medevac at LS-15, and, where possible, to strike interdiction targets.^{86/}

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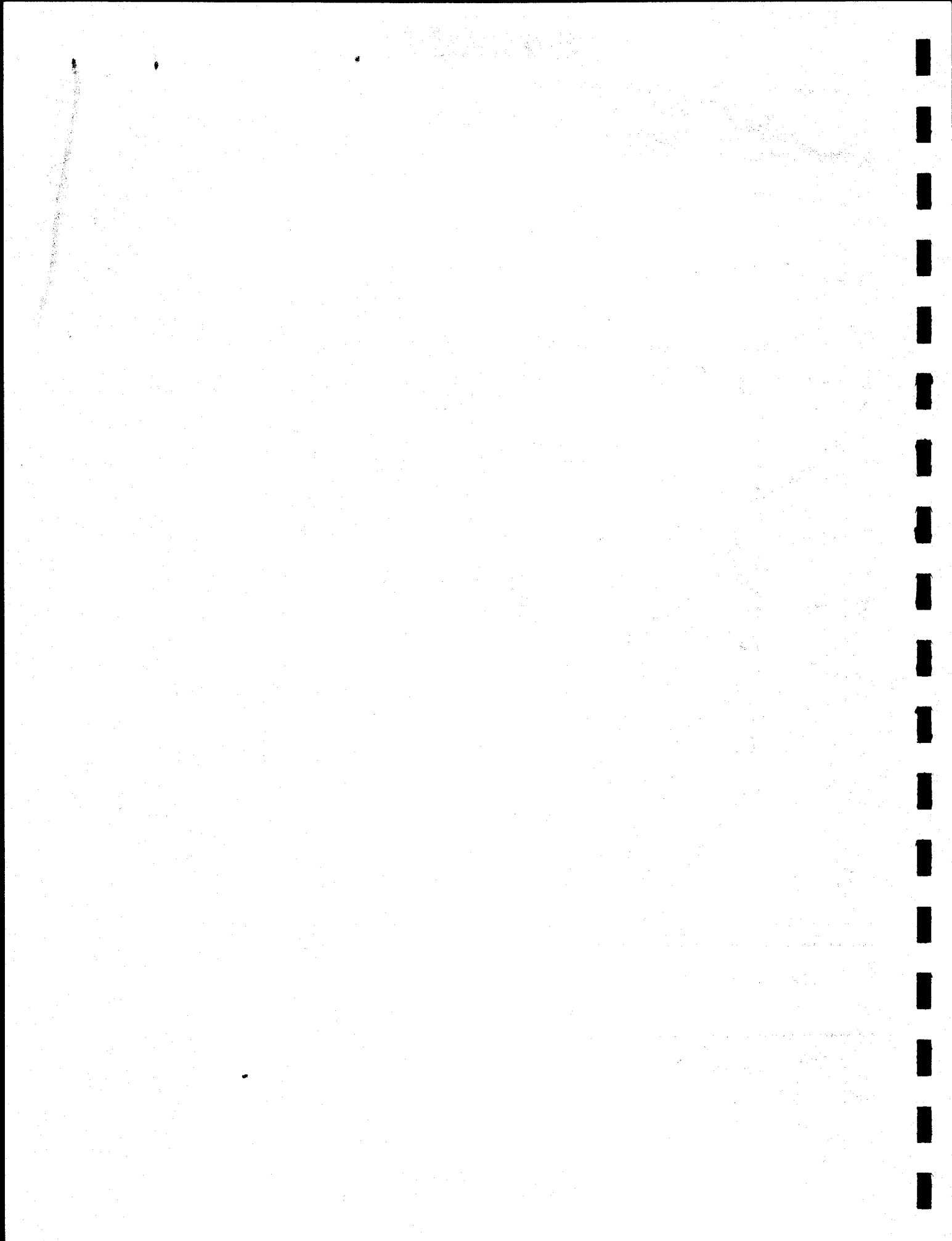
The air defense of the four Lima Sites in large measure was related to a patchwork of areas covering the designated battlefield area IFR boxes within the DBA, the Raven Box overlying the DBA and protruding western PDJ, and Routes 7 and 723 between the NVN border buffer zone and the PDJ.^{87/} (See Figure 6 for location of IFR boxes.)

As requested by AIRA, the main USAF tacair effort was flown to provide close air support in the DBA. From 1 to 27 March, for example, 1437 of 1796 fighter-attack sorties struck in the DBA.^{88/} The rules of the Raven Box in which the DBA was generally located made it mandatory that VFR, close air support strikes be flown under FAC control. Between 1 and 27 March Ravens controlled 45 percent of Barrel Roll sorties, mostly into the DBA. OV-10 Nail FACs and F-4 Tiger FACs generally worked in the SOAs and were occasionally requested to direct strikes in the DBA. Nails and Tigers in all areas controlled seven per cent of the Barrel Roll sorties. Also existing within the DBA were 28 IFR boxes where approval was given for IFR bombing. The three Special Operating Areas (SOA) (See Figure 3) to the east were validated for strikes within the restrictions provided by the Rules of Engagement (ROE). Again using data from 1-27 March, targets in the boxes were most commonly struck by IFR sorties. A total of 577 sorties expended ordnance using all-weather techniques, Combat Skyspot (447), Loran (118) and Commando Nail (12).

Although the DBA received first priority and most of the tac-air support, some interdiction targets became so clearly lucrative

[illegible]

FIGURE 7



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that they could not be ignored. Striking in the SOAs overlying the enemy's PDJ supply bases and the Route 7 supply corridor, tacair was able to maintain at least a token effort against interdiction targets. From 1 to 27 March 120 sorties struck in SOA 2 over the PDJ; 81 sorties hit SOA 4 over Ban Ban and Route 7 east to the NVN border buffer zone; 82 sorties expended in SOA 3 overlying the inter-connecting segment of Route 7 between SOA 2 and 4.^{89/} The greater selectivity allowed when applying a few sorties against the enemy's entire logistical support complex made for an extremely high percentage of the sorties achieving significant BDA. The effort against supplies also yielded a pleasant surprise late in March when an F-4 Bullwhip recce mission turned up an ammunition supply cache near Ban Ban. First strikes on the target proved to be extremely lucrative. By re-striking the area several times, the cumulative BDA for the target was finally tabulated as 4469 secondary explosions, 29 secondary fire, 825 cubic feet of supplies destroyed, and one truck destroyed.^{90/}

Aerial support of LS-15 became an increasingly difficult problem for the USAF A-1s and the RLAF T-28s. Air America cargo aircraft provided the means for resupply by air drops onto a drop zone at the site. Supplies that missed the zone ended up in enemy hands because the encircled site defenders would not expose themselves to the enemy's fire to retrieve the materiel.^{91/} Medevac by Air America helicopters required A-1 escorts and was scheduled twice a day.^{92/} Even with the A-1s attempting to suppress enemy fire, at times the

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enemy's reaction exceeded what the Air America helicopters could handle, and some medevac missions had to be aborted. On 30 March, friendly ground forces helilifted to the northwest of the site launched toward LS-15 in hopes that supplies could be brought in by surface means.^{93/}

At night the sites were supported by USAF AC-119 and RLAF AC-47 gunships and USAF C-123 flareships. During the 1-27 March time period, 120 AC-119 sorties supported 119 ground actions and flew on station 213 hours of the 235 hours for which they were scheduled.^{94/} The crews disliked standing by over the DBA when potential truck-killing was available on the PDJ and along Route 7.^{95/} Whether this was the proper use of this sophisticated interdiction system probably will long be debated. In the period cited, the AC-119s accounted for only 19 trucks destroyed and ten damaged.^{96/} The C-123s averaged three missions per night and RLAF AC-47s, available on alert at nearby Luang Prabang (L-54), averaged two per night.^{97/} QRF F-4s from Udorn rounded out the night effort by supplying 190 sorties in the 27-day period.^{98/}

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CHAPTER III
TACTICS AND TECHNIQUES

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With few exceptions, the tactics and techniques used in northern Laos were those which evolved over several years of experience. Most have been amply covered in other documents and previous Project CHECO reports, especially "Air Operations in Northern Laos, 1 November 1969 - 1 April 1970," and need little amplification.

The Aircraft

The Raven FACs, flying O-1s out of Vientiane, Long Tieng and Luang Prabang for the most part, succeeded as FACs through the virtue of experience, knowledge of the terrain, enemy tactics and sheer courage. All were volunteers, after flying a minimum of one half year in South Vietnam, and many were so dedicated that they extended their SEA tours after getting a Raven assignment.

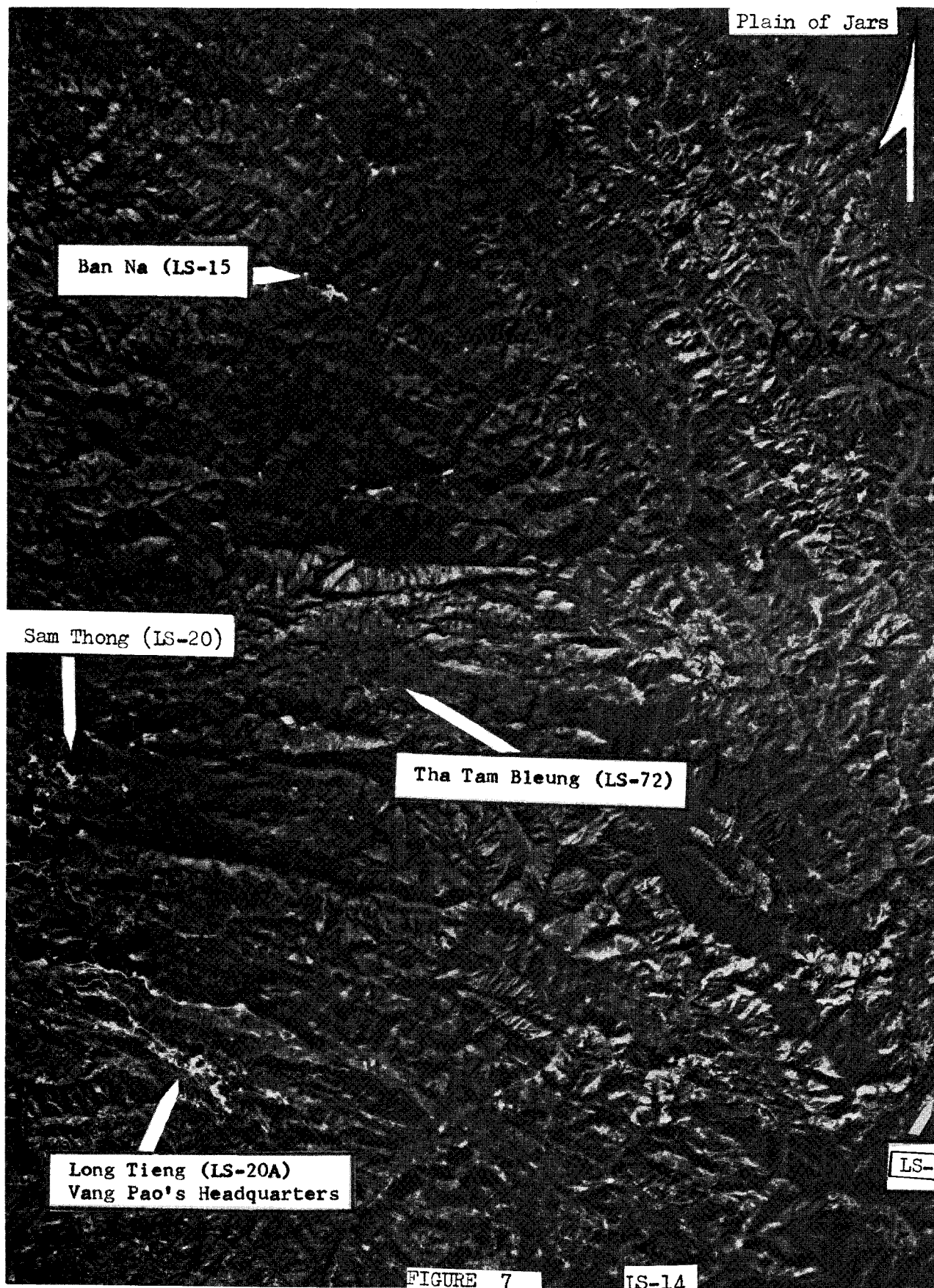
The Lao T-28 pilots also worked out of Vientiane, LS-20 and L-54 at Luang Prabang. Again, their courage and exceptional tactical abilities were never questioned. Armed with 250 and 500 pound bombs and .50 caliber machine guns, the T-28 pilots prided themselves in low altitude bombing and strafing over some of the rougher terrain in Southeast Asia. (See Figure 7 showing terrain ruggedness in the VP area.) The T-28s flew the valleys and ridges under intense enemy ground fire to get the job done, often pressing so close that they sustained an inordinate amount of battle damage. When enemy pressure built, they were known to fly eight to ten

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sorties or more, a day, in notable cases from before sunup until nightfall.^{99/} Even though these sorties were often only minutes in duration and directed against targets near the airstrips without FAC control, the courage of these pilots was tremendous.

The Hobo A-1s were in great demand by the CAS forces, especially for medevac and resupply escort because of their ruggedness and heavy load-carrying capabilities, along with their long loiter time. The dwindling numbers available (19 possessed as of February 1971)^{100/} and the demands for their use in SAR resulted in few actually being fragged to the Vang Pao complex. Normal procedure was for two sorties to be fragged for air-borne medevac alert with a 1000 hour TOT in the morning, and two more with 1500 hour TOT in the afternoon.^{101/} Generally, the A-1s worked with T-28s and a Raven FAC communicating with air and ground to coordinate medevac or resupply efforts. Routinely, when all their ordnance was not expended or medevac/resupply did not take place, the Hobos were directed to other targets and, with their close support ordnance, were effective in support of TIC.

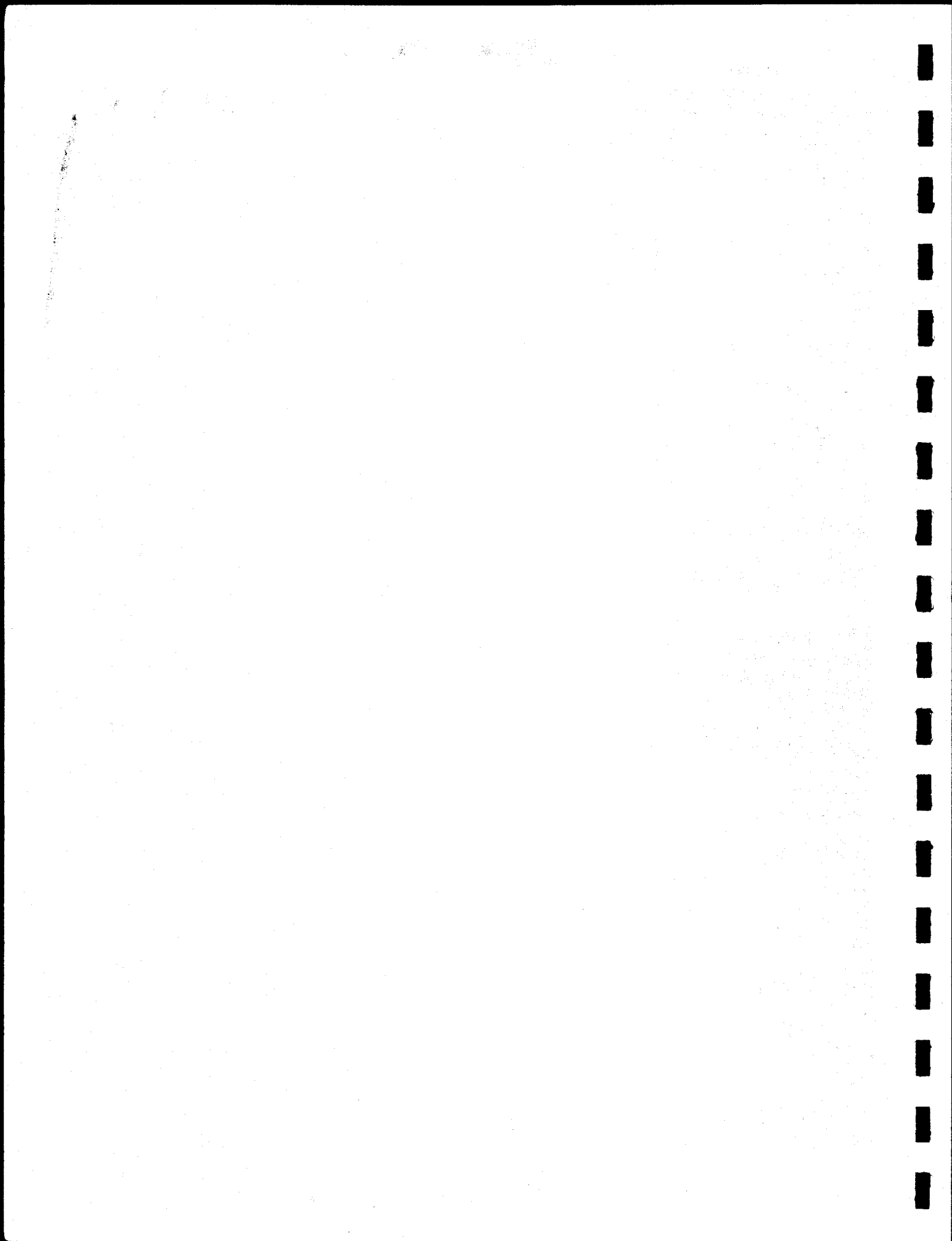
Since the Meo guerrilla could simply "melt into the woods and go home" if demoralized or despondent, morale was important. Equally important, however - from a purely tactical sense - was 24 hour-a-day air power, striking not only in support of TICs, but hitting troop concentrations, supply areas and AAA and interdicting enemy LOCs in order to reduce NVA/PL capabilities of mounting a sustained and heavy assault.



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FIGURE 7

LS-14



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The F-4s demonstrated their ability to work in all areas of northern Laos. Fast-moving, rugged, and capable of carrying a large load of big bombs, the F-4s could work either in the DBA for close support or in the high threat areas to the east where 37mm (and up) AAA existed. These jets struck under Nail or Tiger FAC direction in the SOAs, and in the DBA under Raven FAC direction when required to work close in with low level delivery ordnance such as MK 82 high drags and napalm. The F-4s proved themselves to be effective in close support even though Raven FACs indicated a preference for A-1s in this mission.

Royal Laotian Air Force AC-47 Spookies and Nakhon Phanom-based AC-119K Stingers provided night coverage over the battle area, primarily in support of TICs, but also to simply provide presence. The Spookies, when initially turned over to the Laos did not inspire them to any great feats of combat. It was said that they would merely fly over a ridge, out of sight of the forward air guide, fire off their 21,000 rounds into the trees, and return to base. A year of patient advice and encouragement by U.S. advisors, however, turned the pilots and crews into a group of dedicated and capable combat flyers. ^{102/}

AC-119s were drab old airplanes with a sophisticated interior and a lethal punch from four 7.62 miniguns and two 20mm Vulcan Gatling guns. A computer linked the sensors-Forward Looking Infrared (FLIR) and Night Observation Device (NOD) - to the pilot's gunsight, so that he could superimpose a movable reticle (from the sensor) upon a fixed reticle

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(the guns' boresight) and, all components being in working order, kill whatever he was aiming at. The aircraft also carried MK 24 flares and other illumination ordnance so that in the event poor weather degraded the sensors, the aircraft commander could at least provide light for the ground troops.^{103/} The primary frailty of the weapon system was the mismatch between the old and the new. The old aircraft demanded substantial maintenance to keep it in the air. On at least one occasion, such a minor malfunction as a poor autopilot was sufficient reason for abort, as were "tired" engines and inaccurate instruments. Five aircraft a night were normally fragged for north Laos, usually to the Designated Battlefield Area to support troops in contact. During this period the actual sortie rate was over four per night. When aborts occurred on the ground, all attempts were made to scramble other aircraft, or make a quick turnaround of a returning Stinger, but maintenance reliability hampered the program for some time during the period of this report. Standing by over the DBA was unpopular with the AC-119 crews. The crews had what they considered a valid complaint; the Stingers were configured for and well-suited for truck killing, and trucks were there. In March, 895 were detected by the OV-1s' SLAR on 31 nightly flights, each of an hour and a half duration.^{104/} On nights when no TICs demanded their attention, the AC-119 pilots felt their orbit was wasted, and they requested permission to go out and work the LOCs. The Air Attache, CAS and the troops on the ground were interested not just in the ability of a gunship to respond to a TIC, but in its presence--the sound of the motors--for morale purposes. A compromise was

worked out where the AC-119s were authorized to work outside the DBA on a "ten minute tether" when the ground situation was quiet--in other words, that they range no further than that which would allow them to respond to troops-in-contact within ten minutes.^{105/} However, this release happened only occasionally due to the real or imagined enemy troops around friendlies on the ground. The Spooky-Stinger combination was credited with excellent night support in the Vang Pao area. All-night coverage by Candlesticks, and F-4 QRF did the rest.

LORAN Targeting, Grid Annotated Photography (LT GAP.)

Perhaps the most serious drawback to the 24-hour coverage concept was that of achieving accurate night and all-weather bombing. Combat Skyspot radar bombing was electronically accurate to a six or eight figure coordinate (UTM) on a map - but most of the maps were inaccurate, in some cases up to hundreds of meters. For several months, the 432d Tactical Reconnaissance Wing flew LORAN-equipped RF-4s over the Barrel Roll, LORAN-photographing broad areas of tactical interest. These photographs were then grid annotated, through use of an overlay.^{106/} By finding a target through visual observation, and then locating it on the grid annotated photo, LT GAP target coordinates could be determined. These coordinates could then be converted to accurate Loran coordinates.

In use, a FAC could determine the LT GAP target coordinates, and pass then to the 432d TRW for conversion to Loran coordinates. These coordinates would be relayed (following proper command and control channels for

approval of the strike) to the pilot of the Loran-equipped aircraft. The pilot would insert these coordinates into his Pave Phantom bombing computer, and by following its steering indications, release his ordnance on target with a high degree of accuracy. One variation, dubbed Pathfinder, provided for a Loran-equipped RF-4 to lead a flight or flights of F-4s on a bombing run. ^{107/}

The value of the system derived from the fact that maps were not required; the Loran coordinates of the point photographed directly below the aircraft were determined at the instant the photo was taken, and therefore corresponded with the actual territory. A previous combat evaluation using a different code name, ended in November 1970 involved 100 drops on five targets. Tests were made from 8,000, 9,000, and 10,000 feet, using 14 aircraft. Ninety-eight impacts were scored and showed a CEA of 110.9, with a CEP of 100 meters. Throwing out seven gross errors, the CEA/CEP ^{108/} was 92.3/90 meters.

The LT GAP, or Loran Targeting by Grid Annotated Photography, system was extended to cover four particular areas of interest in northern Laos; the Plain of Jars, the Long Tieng area, Routes 7/71 and Route 723 from the border to Xieng Khouangville. In addition to providing LT photo kits to the Raven FACs, plans were made to distribute the kits to the 23d TASS, 56th SPOP Wing, Det 1, 56th SPOPWg, 7th AF DO, 432d TRW and the 8th TFW. Some discrepancies were found in the photo kits initially provided, but the errors were correctable.

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Following preliminary discussions with Ambassador Godley and the Air Attache, Vientiane, both of whom confirmed their interest and support of the project, the 432d TRW received 7th AF approval for a 24-hour evaluation of the system to answer several issues effectively. They were: ^{109/}

Establish the validity of the LT GAP techniques over a variety of targets.

Establish in the Raven FACs a capability to generate targets of opportunity using the LT GAP techniques.

By flying the reconnaissance and strike role during the period, validate BDA and CEA/CEP .

Establish upper capability to respond to all-weather conditions in Barrel Roll.

Determine, establish, and refine procedures for the oncoming southwest monsoon season.

Estimate Wing can approximate 15 Arc Light sorties per day using LT GAP. Because of improved CEAs, may demonstrate substitution value of Loran tac air for B-52. Could have implications important to Air Force operations.

The approved 24-hour evaluation was flown 27 March 1971, and although photographic evaluation of the BDA was minimal because of weather, the Director of Operations for the 432d TRW expected accuracies to be well within 100 meters. ^{110/} It was noted that the system could lead to FAC-less VFR strikes under flight lead control. This led to the corollary that such strikes could be made without giving the enemy the warning received from a FAC's marker. The strike aircraft, by offsetting and flying an "innocent" heading, could roll in from a point and pick up his target from the picture his grid photo gave him. ^{111/}

If the expected accuracies envisioned for the LT GAP system proved out, the USAF would have added a valuable adjunct to its all-weather bombing repertoire; one which not only would have value during the upcoming wet season in Laos but also could have significant and far-reaching effects in the future role of tactical air.

More Changes at Headquarters, 7/13AF

The review of how 7/13 activities in Thailand supported the war effort in Laos, instituted by the 7/13AF Deputy Commander, Major General Andrew J. Evans, Jr., began to produce some improvements, especially in the conduct of the Barrel Roll war. General Evans was particularly interested in smoothing out the way 7/13AF, AIRA and CAS routinely conducted business. ^{112/}

In January, the Barrel Roll Working Group meetings of all interested agencies stopped being simply a clearing house to exchange operations and intelligence data and began to prepare a proposed written plan for the following month's air operations in northern Laos. ^{113/} To write the proposal, estimates of the situation and known, forecast operations of 7AF, 7/13AF, AIRA and CAS were solicited. Considering these, plus the overall level of activity, competing priorities and resources available, a typical frag day could be constructed and variations highlighted. In this way, the goals for the following month were stated and the program for supporting air identified. When the proposal was developed to the satisfaction of all inputting agencies, copies were forwarded to 7AF. The Operations people at 7AF thereby knew on a month-long basis what 7/13AF recommended be provided in support of AIRA and CAS requirements. As the month of the

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proposal unfolded, many phone calls between 7/13AF and 7AF Operations sections resulted in frequent changes and updates to the proposal, but at least both headquarters had a point of departure on what might be expected in Barrel Roll.

As personnel turned over in key positions of 7/13AF, AIRA and CAS, relationships were formed that developed into a smoothly functioning interplay. The important relationship between 7/13AF and AIRA, having suffered varying periods of improvement and deterioration, was noticeably on the upswing in the period of this report.

An old problem with CAS, lack of coordination as ground operations requiring air support were planned, was still apparent as the launch of Operations COUNTERPUNCH III was announced with short notice. Other pressing high-level commitments for 7AF resources precluded the requested support for the CAS-backed operations on the launch date picked. ^{114/} COUNTERPUNCH III moved out on time, but reduced air support initially was a factor that hindered the overall operation. Again the lesson was learned that all interested agencies must develop such operations by working together throughout the planning phase. Current Operations and Targeting personnel at 7/13AF thereafter were selected on an extremely limited basis to accomplish plans to support future CAS-backed ground operations and relationships with CAS steadily improved during this reporting period.

Headquarters 7/13AF Operations and Intelligence people worked hard in their role of studying and recommending targets and sorties for the

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^{115/}
Barrel Roll war. Seventh Air Force published the frag, but inputs from 7/13AF were increasingly more evident for northern Laos. On a daily basis 7/13AF held a meeting between Current Operations and Targeting people to prepare a message for 7AF fraggers recommending targets, providing intelligence data, identifying ordnance, and recommending priorities in consideration of data provided by AIRA and CAS. As regards the IFR boxes, 7/13AF was not content with simply bomb release into the box area, but provided 7AF in the daily message the desired mean point of impact (DMPI) based on all-intelligence sources.^{116/}

As the relationship between 7/13AF and AIRA developed, Operations people at AIRA were able to draw more upon the experience of Operations planners at 7/13AF, and better planning was achieved which benefited both agencies.^{117/} To the extent possible the flow of requests by AIRA for air support and special research of weapons or tactics was put on a routine basis, and hurried, last-minute efforts were minimized. Smoothing out activity by allowing sufficient lead time resulted in an improved rapport between AIRA, 7/13AF and in turn, 7AF.

Another improvement in the way 7/13AF supported the Barrel Roll war was in the way targets were developed. Where previously 7/13AF Intelligence had requested the FACs flying north to conduct VR over designated areas, the FACs were later given specific points to investigate based on other Intelligence sources that indicated a promising target.^{118/} By working from such leads, the FACs VR gave confirmation to a target's particular

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worth and provided an update of target information. Such designation of particular points for VR was a key method in insuring that the extremely limited sorties striking outside the DBA did, in fact, hit targets well worth the sorties allowed to interdiction and hard targets. In passing, it is noteworthy that the FACs were still allowed time to explore areas on their own and through their own initiative find additional targets for consideration.^{119/}

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CHAPTER IV

THE OUTLOOK

By 1 April 1971, the occasional first rains of the wet season had no appreciable effect upon the enemy's assault against Vang Pao's stronghold Lima Sites. The NVA force estimated at almost 8,500 men was in close proximity to LS-20, 20A and 72, and the friendlies' corridor into LS-15 had not been achieved.^{120/} The enemy force was reasonably well supplied from supplies stocked on the PDJ, principally at the southern tip. Daily they were shelling LS-15 with 85mm and 122mm artillery moving about on the PDJ and were rocketing and mortaring all four sites. Their probes by ground units had progressively overrun defensive outposts and increased the threat to the sites. The situation at encircled LS-15 became increasingly acute as the enemy hindered air resupply and medevac efforts.

For the first time in Vang Pao's long campaign against the PL/NVA his forces had achieved some degree of parity. The estimated 12,000 man force under his command at the four Lima Sites were irregulars, the Meo complement of his guerrilla units was reduced to less than fifty per cent--FAR and other guerrilla battalions added from MR III. Vang Pao's army was well dug in at the Lima Sites and was able to offer counter artillery fire with his four fire support bases and to launch small probes toward the enemy. By 1 April, a major ground effort to relieve LS-15 was underway.

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In the air what was regarded as a fairly successful balance had been achieved in the allocation of sorties to targets. The DBA still received about four-fifths of the effort. The strikes against logistics targets in the SOAs provided significant BDA in over 80 percent of the strikes made VFR where damage could be assessed.^{121/}

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The low visibility resulting from haze and the smoke from the farmers' slash-and-burn preparations for spring planting continued to restrict F-4 support of ground forces. Dropping bombs using the Udorn-based Combat Skyspot radar was still the principal means of striking IFR-validated targets.^{122/} Loran bombing of IFR targets held promise of greater accuracy after Loran mapping of important Barrel Roll target areas was completed. The results of an almost full day of F-4 Loran strikes on 27 March could not be fully appraised due to post strike photography being inhibited by weather.^{123/} Future strikes would no doubt allow the hoped-for analysis.

The AC-119s and C-123s provided continuing support at night and gave the Lima Site defenders the assurance of "many motors overhead." The AC-119s were still restricted by a 10-minute tether to Channel 108, but occasionally were able to hit a truck on the PDJ.

The change from defense to offense for Vang Pao did not occur during March as it had in 1970. In the 1971 campaign the change of role would occur sometime after 1 April. To that date it appeared that, in the air, support being provided had sufficiently assisted in the defense of Vang Pao's Lima Site stronghold; on the ground the loss of positions and

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outposts to the enemy was gauged against the arrival of the wet season close at hand.

In comparing the land areas held by the NVA/PL, and the RLG forces on 1 April 1971 with 1 April 1970, generally little change could be noted. For the entire year the ebb and flow of fighting was concentrated within a few kilometer margin southwest of the Plain of Jars. Estimates varied among U.S. officials as to what the enemy's objectives were. Whether on offense or defense, he had consistently maintained pressure on Vang Pao's forces in MR II and around Luang Prabang in MR I, posing a continuous threat to the Royal Laotian Government. For the CAS-supported irregular army, the objective of U.S. support was stated by a CAS official:^{124/}

Ambassador Godley's program for northern Laos is to stabilize the military situation; we're not looking for an About Face movement anymore, just a stabilizer so that any negotiations that might occur would still be within the framework of the 1962 Accords.

The USAF support given to achieve the goal specified by the Ambassador still, in early 1971 proved to be the essential difference in the formula for suc-

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FOOTNOTES

CHAPTER I

1. (S) Discussion of Threats and Trends, with First Lieutenant Peter C. Oleson, Intelligence Analyst, Hq 7/13AF, 17 February and 27 February 1971. (Hereafter cited as Discussions with Lt Oleson) (Sup Doc 2)
2. (S) PACAF (INXX) Ltr, 4 Aug 71
2. (S) Weekly Laotian Sitrep, 10-16 November 1970
3. (S) Barrel Roll Working Group Minutes, 26 January 1971, Hq 7/13AF Udorn, Thailand. Also (S) Joint Operational Summary Laos, #5-71, 300810Z Jan 71. (Joint Army, Navy, Air Force Summary will hereafter be cited as JANAF Summary, dtg, and period covered, e.g., as above, 20-27 Jan 71)
4. (S) Barrel Roll Working Group Minutes, 16 Mar 71. (Hereafter cited as BRWG Minutes, date)
5. (S) Embassy official's comments at BRWG, 16 Feb 71
6. (S) Discussions with Lt Oleson
7. (S) Discussions with Lt Oleson
8. (S) Minutes: Daily 7/13AF 0800 Briefing, 5 Mar 71. Also, (S) Discussions with Lt Oleson
- (S) PACAF (INXX) Ltr, 4 Aug 71
9. (S) Interview, Major General Andrew J. Evans, Deputy Commander 7/13AF, by Lt Colonel Harry D. Blout, Udorn RTAFB, 30 April 1971 (Hereafter cited Evans Interview of 30 April 71)
10. (S) Ibid
11. (S) Ibid
12. (S) BRWG Minutes, 16 Feb 71
13. (S) CAS Interview
14. (S) Project CHECO Report: Air Operations in Northern Laos, 1 Nov 69 - 1 Apr 70, published 5 May 1970. (Hereafter cited as CHECO Report, Air Ops in No Laos, 1 Nov 69 - 1 Apr 70)
15. (S) Comment by Colonel Sam Hollenbeck, D/O, 388th TFW at BRWG Meeting, 16 Feb 71

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16. (S) CAS Interview
17. (S) BRWG Meeting, 16 Mar 71. Also, (S) CAS Interview
18. (S) CAS Interview. Also, (S) BRWG Meeting, 30 Mar 71
19. (S) Minutes: Daily 7/13 Briefing, 4 Apr 71, Also (S) JANAF Summary, 030300Z Apr, 26 Mar-2 Apr 71
20. (S) Evans Interview of 30 Apr 71
21. (S) CAS Interview; (S) PACAF (INXX) Ltr, 4 Aug 71
22. (S) JANAF Summary, 26 Mar-2 Apr, 030300Z Apr 71. Also, (S) BRWG Minutes, 30 Mar 71
23. (S) Msg, AMEMB Vientiane to SECSTATE, 110552Z Feb 71
24. (S) Discussions with Captain Gerald T. Frazier and Lieutenant Peter C. Oleson, Intelligence Analysts, Hq 7/13AF, 17 Feb-27 Feb 71. Also, (S) CAS Interview. Also, (S) BRWG Floor Comments.
25. (S) CAS Interview

CHAPTER II

26. (S) Project CHECO Report, Air Operations in Northern Laos, 1 Apr - 1 Nov 70, 1 May 1971. (Hereafter cited as Air Ops in No Laos, 1 Apr-1 Nov 70)
27. (S) Ibid
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- 95. (S) Remarks by Major Bautz, 18th SOS, OL at Nakhon Phanom, BRWG Meeting, 30 Mar 71. Also (S) Interview with Major Wallin
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CHAPTER III

- 99. (S) CAS Interview
- 100. (S) Hq 7AF Command and Status Report, Feb 71
- 101. (S) CAS Interview
- 102. (S) Hotsko Interview
- 103. (S) Interview with Major Burt W. Wallin, Chief, Gunship Branch, 7th AF (DOPS), 11 Apr 71 (Hereafter cited as Major Wallin Interview)
- 104. (S) Interview, Captain Gary Berensen, 7/13AF (INOW) by Lt Colonel Harry D. Blout, Udorn RTAFB, 4 May 1971
- 105. (S) Operations Presentation, BRWG Meeting, 30 Mar 71
- 106. (S) BRWG Minutes, 30 Nov 70
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- 110. (S) Evans Interview of 30 Apr 71
- 111. (S) Interview, Colonel Gordon H. Scott, 7/13AF (DO) by Lt Colonel Harry D. Blout, Udorn RTAFB, 1 May 71 (Hereafter cited Scott Interview)
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- 118. (S) Interview, Colonel Dante E. Bulli, 7/13AF (IN), by Lt Colonel Harry D. Blout, Udorn RTAFB, 1 May 1971
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- 120. (S) Oleson Interview, 7 Apr 71
- 121. (S) Interview Captain Kenneth Beaver, Hq 7/13AF (INT) by Lt Colonel Harry D. Blout, Udorn RTAFB, 6 Apr 71
- 122. (S) Operations Briefing, BRWG, 30 Mar 71
- 123. (S) Remarks by Colonel Homer E. Hayes, D/O 432d TRW, at BRWG Meeting, 30 Mar 71
- 124. (S) CAS Interview
- 125. (S) Remarks by Colonel Curry, BRWG, 30 Mar 71

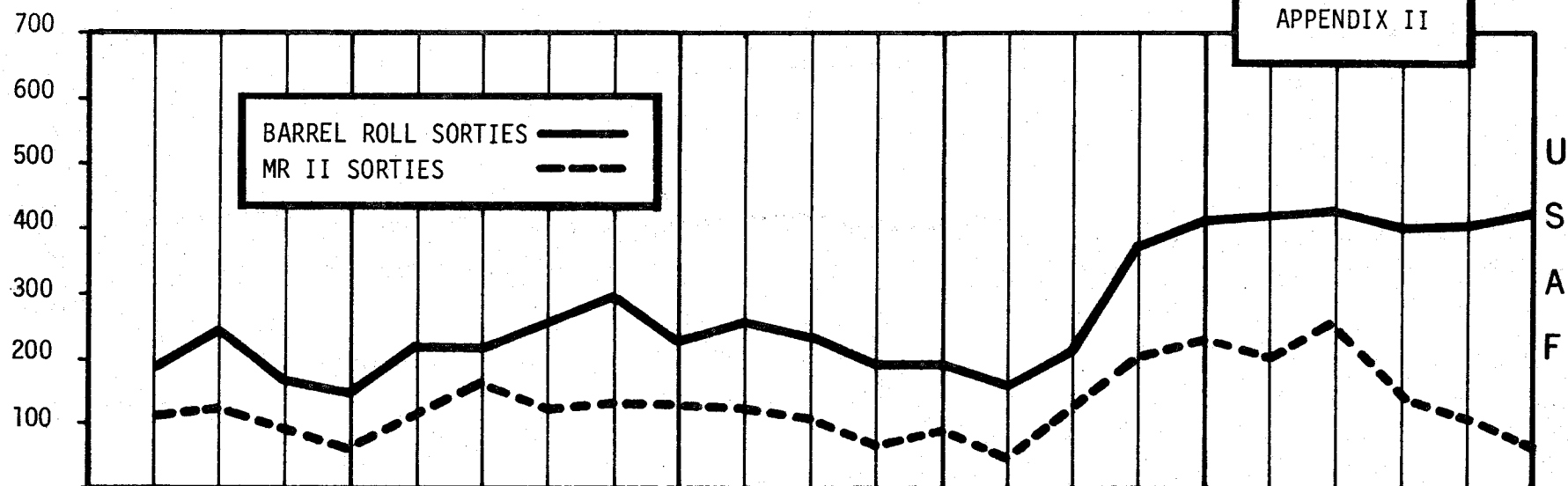
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APPENDIX I
FIGHTER-ATTACK-GUNSHIP SORTIES

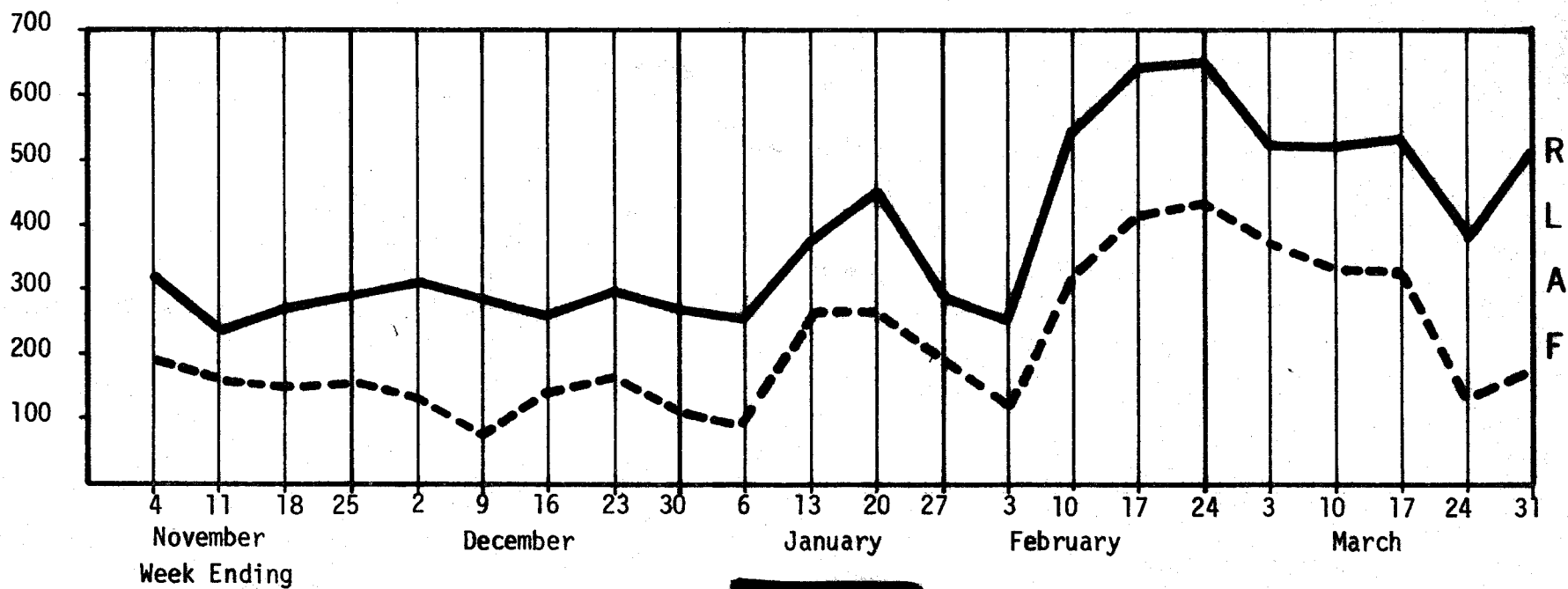
BARREL ROLL				MR-II		
<u>Week Ending</u>	<u>USAF</u>	<u>RLAF</u>	<u>Total</u>	<u>USAF</u>	<u>RLAF</u>	<u>Total</u>
Nov 4	173	322	495	103	194	297
11	227	240	467	114	160	274
18	162	279	441	94	145	239
25	153	296	449	65	158	223
Dec 2	210	311	521	108	141	249
9	215	288	503	148	77	225
16	249	257	506	122	133	235
23	289	301	590	133	167	300
30	219	269	488	127	106	233
Jan 6	253	259	512	121	94	215
13	234	372	606	106	266	372
20	191	451	642	66	270	336
27	190	291	481	86	192	278
Feb 3	157	250	407	50	120	170
10	208	537	745	116	319	435
17	363	644	1007	205	416	621
24	405	657	1062	224	429	653
Mar 3	414	519	933	199	366	565
10	421	518	939	257	337	594
17	405	530	935	136	324	460
24	406	383	789	116	132	248
31	418	508	926	74	165	239

SOURCE: JANAF Summaries

APPENDIX II



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GLOSSARY

AA	Antiaircraft
AAA	Antiaircraft Artillery
ABCCC	Airborne Battlefield Command and Control Center
ABF	Attacks by Fire
*ADC	<u>Auto Defense du Choc.</u> Technically an obsolete term now. Refers to local guerrillas who are not paid in the same sense as are the SGUs or BGs, but whose stake in the war is their homeland, or where they live.
*ADO	<u>Auto Defense Ordinaire.</u> In essence village defense forces, more or less at the bottom of the ladder in training and armament
AIRA	Air Attache
ARVN	Army of Republic of Vietnam
*BC	<u>Commando Battalion.</u> FAR
*BG	<u>Guerrilla Battalion.</u> A three number designation follows them. Formerly designated by a color, and still do use for a call sign. Previously called SGU (Special Guerrilla Unit)
*BI	<u>Battalion Independent.</u> Generally FAR or FAN
BOQ	Bachelor Officers' Quarters
*BP	<u>Parachute Battalion.</u> A misnomer, since there are not any parachute units in Laos. FAR
BR	Barrel Roll
*BV	<u>Battalion Volunteer.</u> Belong to FAR
CAS	Controlled American Source
*CAS	Irregular, BG, SGU all refer to those paramilitary assets controlled by CAS
CEA	Circular Error Average
CEP	Circular Error Probability
*CR	<u>Regional Company.</u> Under FAR Also stands for Commando Raider, specially trained guerillas used in interdiction operations along the Ho Chi Minh Trail; followed by a three number designation is the <u>Regional Company</u> of the FAR, almost exclusively found in MR I, in the Luang Prabang and Sayaboury Province areas.
DBA	Designated Battle Area
DMZ	Demilitarized Zone
EM	Enlisted Men

*Special Laotian Military Terms

~~NOFORN~~

FAC	Forward Air Controller
*FAN	<u>Force Armee Neutral</u> . Neutralist Forces, generally used to define the friendly neutralist forces, neither the Deuanist neutralists who are aligned with the Pathet Lao, nor the Khammouane neutralists.
FAG	Forward Air Guide
*FAR	<u>Force Armee Royale</u> , or the forces of the Royal Lao Government.
FLIR	Forward Looking Infrared
*GM	<u>Ground Mobile</u> . Headquarters element of the Guerrilla Battalions.
HLZ	Helicopter Landing Zone
IDP	Interdiction Points
IFR	Instrument Flight Rules
LOC	Line of Communication
*LT GAP	LORAN Targeting by Grid Annotated Photography
NOD	Night Observation Device
NVA	North Vietnamese Army
OB	Order of Battle
OUSAIRA	Office of the U.S. Air Attache
PDJ	Plain of Jars; Plaine des Jarres
PL	Pathet Lao
QRF	Quick Reaction Force
RLAF	Royal Laotian Air Force
RLG	Royal Laotian Government
ROE	Rules of Engagement
SAR	Search and Rescue
*SAT	<u>Special Action Team</u> . Also a guerrilla designation. These are in essence the same thing as the Commando Raiders.
SEA	Southeast Asia
SGU	Special Guerrilla Unit
SLAR	Side-Looking Airborne Radar
SOA	Special Operating Area
TACAN	Tactical Air Navigation
TIC	Troops in Contact; Target Intelligence Center
TOT	Time over Target

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UTM
UHF

Universal Transverse Mercator
Ultra High Frequency

VFR
VR

Visual Flight Rules
Visual Reconnaissance

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PACAF - HAFB, Hawaii

